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ORIGINAL ARTICLES.

ABDOMINAL SECTION FOR TRAUMATISM, WITH TABLES OF TWO HUNDRED AND THIRTY-FOUR CASES.

Read in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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The term "abdominal section for traumatism" is meant to include all cases where the surgeon as a primary measure deliberately opens the abdomen or enlarges an already existent wound for the purpose of searching for intra peritoneal lesions, and, if they are proved to exist, of repairing them as far as possible, but in any case to cleanse the cavity and render it aseptic.

In January, 1887, under the above heading, I presented to the Philadelphia County Medical Society, tables of fifty-seven cases and comments thereupon, as well as a number of unpublished case histories. In that paper, which was the first collective résumé of the subject, I arrived at conclusions which I am willing to again offer now as substantiated by the much larger knowledge set forth in the present tables.

Shortly after the appearance of that first series of tables I was glad to grant the request of Sir William MacCormac that he might republish them as an appendix to his oration upon "Abdominal Section for the Treatment of Intra-peritoneal Injury" before the Medical Society of London. Since the appearance of that monograph tables of gunshot wounds have been published by Baker, Dalton, and Coley; also one of ruptured bladder by Grant. To each of these authors I am indebted for one or more valuable references, also to Dr. John Ashurst, Jr., for a number of references and for several corrections in the present tables; and to each of those gentlemen whose cases in the tables are marked "unreported," for the privilege of publishing them. But to the conductors of the *Index Medicus* I am most indebted, for without the aid of that periodical the construction of such statistics would verge upon the impossible.

The field bounded by my title and definition having been thoroughly tilled in the previous paper will not again be gone over systematically; merely an old point here and there will be emphasized or a new one introduced. As before, a number of cases of section for traumatism have been excluded where interference was delayed until after the lapse of many days or even weeks or months. These can properly be kept out of a tabulation of primary operations and should be classed, as suggested by Gaston, as "secondary section for traumatism."

The statistics presented in this communication are not contrastable with those of the first paper because in the new totals are included very many fatal cases which had been operated upon prior to January, 1887, but which up to that time had not been published. Encouraged by seeing other fatal cases reported many operators have since put upon record fatal cases previously treated, so that while almost none but successful cases had up to that time been recorded, now almost all have been published. It is extremely gratifying however, to note the steady decrease of mortality attendant upon this modern procedure, and the more so because the recovery percentages of the present tables have had to contend with a flood of fatalities which properly belong to the earlier statistics. Also is it most satisfactory to find after the lapse of but little over two years that the very last opponents to section for traumatism—then so numerous—have long since been silenced or converted by the eloquent teachings of accumulated experience, knowledge, and result.

The total number of cases of abdominal section for injuries of all classes resulting from traumata which I have been able to collect up to date is 234. Of these 96 recovered and 138 died, a general mortality of 58.97 per cent. Of this total, 110, or 47 per cent., were gunshot wounds; 79, or 33 per cent., were stab wounds; 27, or 11 per cent., were ruptured bladders; and 18, or 7 per cent., were cases of ruptured or contused intestines.

Ninety-seven American surgeons operated upon 165 cases with 62 recoveries and 105 deaths, a mortality of 65.45 per cent; while 64 foreign surgeons operated upon 69 cases with 34 recoveries and 33 deaths—a mortality of 47.82 per cent.

By cities, operations were performed in: Philadelphia 32, New York 25, St. Louis 22, London 22, and in Chicago 13.

The causes of death as indicated by the tables form an array which is shameful to modern surgery and one which we may expect to see entirely reversed and changed for the better ere the time comes for again revising the statistics.

Death succeeded operation from causes as follow:—shock and prolonged operation, 8; peritonitis from delayed operation, 36; peritonitis developing subsequent to operation, 16; peritonitis from overlooked wounds, 11; peritonitis following extravasation from poorly sutured wounds, 4; ditto from wounds which it was impossible to suture, 2; toxæmia from absorption of urine from the peritoneum because of delayed operation after bladder rupture, 7; opium poisoning, 2; cholæmia from obstructed hepatic duct, 2; gangrene of bowel, pericarditis, cerebral embolism, and delirium tremens, each 1; not stated, 16. In 4 other cases overlooked wounds were found post mortem but the patient had perished of other causes before peritonitis could develop.

Three cases died upon the table: 2 from hæmorrhage; 1 from shock and prolonged operation. Ten cases died immediately upon removal from the table, and 40 within 12 hours. Very many of the cases were upon the table a very long period of time and it is to be sincerely hoped that a more general introduction of modern time—hence life—saving methods of dealing with intestinal lesions will do much to ameliorate the death-rate of these cases.

In eighteen instances penetration of the peritoneal cavity was proved, the abdomen opened, and no intra-peritoneal injuries found. All of these recovered save two, one of which died of accidental opium poisoning, the other, of causes not stated, in thirty-six hours. In my opinion all of these cases were far better off opened and cleansed than if they had been let alone with the possibility of subsequent septic inflammation or of unsuspected visceral wounds. Apropos of this very point is a case in the tables where it was concluded that because the hydrogen insufflation test gave negative results that there could be no justification of opening the abdomen. Violent peritonitis speedily developed, and the abdomen was then opened; no wounds were found but a violent general purulent peritonitis was present and from it the patient subsequently died.

Many symptoms of intra-abdominal injury have in the past few years been proved entirely fallacious and unreliable. Thus, in the tables are recorded many cases where with most intense shock either no injury existed or only those of most trivial description were found, whilst on the other hand, patients walked great distances and remained for hours without the least sign of shock when multiple perforations of the intestines and other terrible injuries had been inflicted. Nor should much reliance be put upon the apparent direction of a bullet, for it is a notorious fact that the abdominal parietes will most readily divert balls from their tracks and occasionally deceive the very elect. Neither should a surgeon be content simply to lay open a ball track that has partially traversed the abdominal cavity, and repair only such injuries as he may find immediately beneath, for the great probability is that injured intestines may, by peristaltic or other force have been drawn to parts of the abdominal cavity most remote from the seat of the injury. In the tables several good instances of this fact are also to be found. Likewise emphysema of the wound surroundings may be a worthless sign. Several times it has been present when the intestines have not been perforated. Disappearance of the usual liver percussion dulness has also frequently been noted when the intestines were simply distended and no perforation existed.

Even my profound respect for Dr. Senn and his contributions to surgical science cannot make me an enthusiast for his hydrogen insufflation test for perforations of the intestinal canal. With me it would be an exceedingly exceptional case in which its assistance would be requisite to determine whether to open the abdomen or not. The tables show that the test has been applied for this purpose eleven times. In eight instances it proved perforations to be present, and in two their absence. Of the latter, one died of septic peritonitis; which death most probably could have been avoided had the abdomen been opened and cleansed upon the simple indication of penetration of the peritoneum. In one Philadelphia case, in the hands of Dr. O. H. Allis, the test was applied thoroughly and failed to demonstrate intestinal perforation. Signs of violent intra-peritoneal hæmorrhage being present however, the abdomen was opened and two perforations of intestine as well as a great amount of free blood were discovered. This patient died upon the table from terrific hæmorrhage originating in an half inch wound across the root of the mesentery. I can see but a most narrow field for the insufflation test in intestinal injuries for, of course, it will at most demonstrate nothing but perforations and will lead the operator, if he trusts to it, to overlook multiform other lesions which are often just as dangerous as perforations themselves. The test will in most cases prove *perforations* but will not invariably do even this, as is instanced above. Many conditions such as impacted fæces, prolapse of mucous membrane and recent adhesions are liable to interfere with its proper efficacy and offer a misleading, perhaps ultimately fatal result to those who rely implicity upon it. Neither can I concede it to be, *per se*, a harmless test, for its application must often occasion extravasation of fæces when that complication may not already have taken place, or rupture of the bowel might be produced, and further the time lost and additional shock produced by its application are all elements to be considered before the test is put into routine use.

The indications for section for traumatism are few but comprehensive. In most cases they resolve into a single one—*proof of the fact of peritoneal penetration*. More difficult to propound but none the less important are the contra-indications thereto. It would be better not to interfere whilst profound shock lasts unless it depends upon such condition as continuing hæmorrhage; in which case it would be the surgeon's duty to interfere even if the patient be *in extremis*, for the surgeon of the near future who is to do many of these operations will not be able to boast, even early in his career, that he has not lost a patient upon the table, because that most distressing occurrence will occasionally be inevitable if we do our whole duty by such desperate cases as are these.

Where portions of one or more viscera have become prolapsed through the wound no contra-indication to section and thorough search for other lesions is presented because it is never by any means certain that the prolapsed portions were the *only* ones liable to injury by proximity to the entrance wound, for they may not have become prolapsed until long after the original injury, and from an entirely different portion of the abdomen. If the physician in attendance is quite ignorant of abdominal surgery, or if the surroundings of the patient are exceedingly bad, delay and awaiting symptoms of peritonitis may occasionally be pardonable, but under circumstances in the very least degree favorable and often when most unfavorable, the time for operation should ever be at the earliest possible moment after injury. No statement in this paper is better justified by a study of the table facts than is this latter.

Median incision is also universally commended as best, and many fatal cases are directly attributable to neglect of the overwhelming evidence accumulated in support of the rule. So also of the oft repeated caution to be systematic and thorough in the search for lesions, for it is impossible to find all lesions which may be present unless this rule is rigidly adhered to. Exceptions to it of course exist, as in case of violent hæmorrhage to which attention would always first be directed but, no matter what are the circumstances, at some time before it is closed the abdomen should be gone over systematically in all cases where there is the most remote possibility of lesions being present.

Another point of value in these cases of abdominal injury is to wash out the stomach in order that its contents may not induce vomiting after operation, or, by passing into the alimentary canal, cause interference with the process of wound repair. This should be accomplished before the induction of anæsthesia unless the patient has already vomited freely, when it may be omitted.

Excision of the intestine was performed seventeen times in fifteen cases by the old method; of these two recovered and thirteen died. Undoubtedly the more general knowledge and application of Senn's methods of intestinal resection and anastomosis will soon exactly reverse these figures, and also by their application to many such conditions as undue narrowing of the bowel lumen after suturing wounds, these same procedures will save still other lives in which heretofore we would rather have risked stenosis than the almost invariably fatal operation of intestinal resection. Anastomosis will usually be preferable to excision because we can often utilize a perforation for one approximation opening or even draw together two enlarged perforations, thus not only saving the time of an old fashioned excision but also that of suturing the utilized perforations. The variety of ways and in what combinations the Senn methods can be adopted are almost unlimited to one having a thorough knowledge of their application. Senn's method of supporting repaired wounds with omental flaps will also find wide application in this field. One instance is reported in the table where the surgeon sewed into a very large wound of the stomach (which could not be approximated without producing severe stenosis) a large graft of mesentery, which clever suggestion opens up a new mine of resources for certain destructive intestinal wounds. The graft, however should always be taken from the omentum and not from the mesentery as reported.

Thrice abdominal nephrectomy was performed and but one case recovered. Twice the spleen was removed and both patients died. Once the gall-bladder was excised—for rupture—and the patient died of cholæmia produced by an overlooked stone which had been driven from the bladder into the hepatic duct at the time of injury. The ureter was cut through by a ball in one instance but the injury was not recognized at the time of operation and the patient subsequently died because of it. In several cases death was due to wounds of the rectum situated so deeply in the pelvis as to render suture of them impossible and the patients died of peritonitis. No really efficient method has yet been devised for treating such injuries, but distension of the rectum by the rubber bags which are sold for the purpose, would undoubtedly bring certain of these wounds into sufficiently easy reach. In two cases the diaphragm was wounded by the vulnerating body gaining access to the abdomen *via* the thoracic cavity. In each instance a hernia of viscera into the thorax existing at the time of operation was reduced, the diaphragmatic wound sutured with catgut, and perfect recovery ensued,

TABLE I.—GUNSHOT WOUNDS.

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
1	A. R. Kinloch, No. Car. Med. Jour., 1882, x, 1.	Adult	11 hours	Slight shock; general abdom'l pain; pain in sacral region; hole in rectum.	Much blood and fæces; 5 perforations of intestine, 2 of mesentery; rectal wound could not be found	Trimmed, and sutured with Lembert's stitch; drain.	Died in 16 hrs.	Post-mortem: another intest. wound found.
2	Kocher, Corresp. für Aertze, 1883, No. 23.	14	3 hours	Collapse; *signs of peritonitis.*	Much blood; wound of large curvature and fundus of stomach 1½ inch.	Sutured.	Recovered.	
3	Jordan Lloyd, Brit. Med. Jour., 1883, i, 560.	19 F.	48 hours	Little shock; *no vomiting*; later constant vomiting and peritonitis.	Much stinking brown fluid; ragged wound of small intestine ¾ in. in diam.	Intestine stitched to abdominal wound.	Died in ½ hr.	Post-mortem: mesentery perforated; contusion of bladder.
4	W. Watkins Seymour, N. Y. Med. Jour., 1886, xliv, 209.	15	13 hours	No shock at any time, vomited; some pain down left sciatic nerve.	Acute peritonitis; 3 lines of colon destroy'd; 2 wounds of meso-colon; thickened duodenum.	All approximated with Lembert sutures.	Died in 21 hrs.	Post-mortem: wounds in good condition; *no others found.*
5	C. A. Jersey, Med. Record, Oct. 16, 1886.	44	20 hours	Much shocked; pain and tenderness of abdomen.	4 wounds of sm. intestine; 2 perforations of mesentery; *abrasion of mesen'y*	All w'nds, except the abrasion, stitched with Lembert sut.	Died in 19 hrs.	Post-mortem; mesenteric wounds; sloughing, and bathed with pus.
6	T. Annandale, Lancet, 1885, i, 740.	15	1 hour	General shock; slight pain in abdomen and pelvis.	Considerable blood; 5 w'ds. of small int., 2 in colon, 2 in rectum; wound of mesentery.	All closed with Lembert sutures.	Died in 24 hrs.	Walked 100 yards after injury; post-mort.; wounds firm; no others found.
7	F. S. Dennis, Med. News, '86, xlviii, 225-253.	23	. . .	Great shock.	Much blood; wound of liver and its great vessels.	None; abdomen rapidly closed.	Died in 48 hrs.	
8	F. S. Dennis. *Ibid.*	26 F.	. . .	. . . .	Much blood; 7 wounds of intestine, 1 of mesentery; uncontrollable hæmorrhage *from iliac veins.*	Wounds sutured. .	Died in 48 hrs.	Post-mortem: abdominal cavity filled with blood.
9	A. V. Park, Chicago Med. Journ. and Ex., 1885, li, 412.	16	22 hours	Abdomen tympanitic; no liver dulness.	Great quantity of blood; ½ inch wound, also groove in small intestine.	Lembert sutures to groove and perforation.	Died in 15 hrs.	Post-mort.: few clots; peritonitis; contused wound of rectum.
10	Wm. T. Bull, Med. News, 1885, i, 171.	22	17 hours	Vomiting; pain; tenesmus; involuntary micturition.	5 wounds of small int.; 1 wound of sigmoid flexure.	Lembert sutures to all.	Recovered.	Ball found among intestines.
11	E. & E. W. Andrews, Journ. Am. Med. As., 1885, p. 177.	Adult	. . .	Vomited much blood; diffused tenderness of abdomen.	Considerable bloody serum only.	. . . .	Recovered.	
12	John B. Hamilton, Jour. Am. Med. As., 1885, ii, 202.	19	. . .	. . . .	11 wounds of small intestine, 2 of colon; omentum and mesentery wounded.	Lembert sut. to int.; wounds ligatured, and removal of injured portion of omentum.	Recovered.	Pelvic suppuration; hæmatocele evacuated through rectum on twelfth day.
13	T. G. Richardson, N. O. Med. and Surg. Jour., 1886, xiii, 867.	Adult	9 hours	Great shock; vomiting; signs of incipient peritonitis.	3 tears of intestine, 1 of mesentery.	All sutured.	Died in 14 hrs.	
14	A. C. L. Ramsay, Northwestern Lancet, '85, iv, 377.	7	6 hours	Great pain; *much vomiting.*	Much blood; *extensive w'nd* of duodenum; contusion of colon.	*Excision of gut,* including wound; Lembert sutures.	Died in 1 hr.	
15	Wm. T. Bull, Med. News, 1886, xlix, 601.	24	6 hours	Severe abdom'l pain; shock; vomiting; diminished liver dulness; fluid in abdominal cavity.	2 wounds of small intest., 2 of transverse colon; extravasation into meso-colon.	All sutured by Lembert's method.	Died in 8 hrs.	Post-mortem: nothing more than above.
16	Wm. T. Bull, Med. News, 1886, xlix, 524.	57	12½ hours	Shock; vomiting; scarce any pain.	Great amount of blood; left lobe of liver almost divided.	None; abd'n closed.	Died on table.	Post-mortem: no other wounds found.
17	Wm. T. Bull, Med. News, 1886, xlix. 524.	25	2½ hours	Nausea; abdomen appeared normal; only vicinity of wound tender.	2 wounds of small intest.; 3 tears of peritoneum of meso-colon; omentum and anterior epiploic appendages torn and bleeding.	Lembert sutures to intestinal wounds; omentum and appendix excised.	Recovered.	
18	Abbe, Med. News, 1886, xlix, 524.	53	3½ hours	Slight shock; vomiting; rapid and increasing abdominal pain; tympany.	4 wounds of sm. intestine; wound between bladder and rectum. Much subperitoneal extravasation.	All approximated with Lembert's suture.	Died in 9 hrs.	Walked two squares after injury. Post-mort.: purulent peritonitis; *ball found* in bladder.
19	F. J. Lutz, Weekly Med. Rev., 1886, 514.	21	10 hours	Right side of abdomen tympanitic, left side dull.	7 wounds of sm. intestine; 4 wounds of mesentery.	Lembert's suture; ligature to mesenteric artery.	Died in 3 days.	Post-mortem: purule't peritonitis; wounds in good condition.
20	Mackeller, Lancet, 1887, i, 37.	23	30 hours	Some shock; no evidence of wound of bowel; next day peritonitis.	2 wounds of lower portion of sigmoid flexure.	Wounds could only be ligated.	Died in a few hours.	Post-mortem: no other wounds; bullet between rectum and bladder.
21	C. B. Nancrede, Phila. Acad. of Surg., 1886.	. . .	. . .	At first little pain or shock; later copious bloody vomiting.	*Perforation of anterior and* posterior walls of stomach; two large perforations of duodenum.	Lembert sutures; "cleansing."	Died in 3 days.	No post-mortem.
22	T. G. Morton, Trans. Phila. Co. Med. Soc., 1887.	36	1½ hours	Some pain; no shock; vomited blood copiously.	4 wounds of stomach, 1 of transverse colon; omentum much lacerated.	Lembert sutures to all.	Died in 6 hrs.	Post-mortem: wounds & abdomen all right; large hæmorrhage (1½ pints) into left pleura from cut intercostal artery.
23	John I. Skelly: Ann. Surgery, 1887, vi, 49.	21	1 hour.	Unbearable abdomin'l pain; wound midway between umbilicus and iliac spine; free bleeding from it.	Entrance and exit wound of peritoneum. Much venous blood in cavity from entrance wound. Well-marked tubercular peritonitis present.	Dusted with iodoform; cavity cleansed.	Recovered.	Ball not found; was imbedded in perispinal tissues.

TABLE I—*Continued.*—GUNSHOT WOUNDS.

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
24	T. A. GcGraw, Med. Rec., '87, xxxii, 233.	24 F.	9 hours	Pain in right iliac and lumbar regions and epigastrium.	Two perfor. ascending colon; extravasation of fæces.	Wounds united by continuous suture; abd. washed out.	Recovered.	. . . .
25	A. R. Kinloch, Med. News, '87, ii, 66.	27	2½ hours	Condition good.	Four perforations of ileum, two of jejunum; mesentery torn and perforated in two places; bleeding from mesenteric artery; much free blood in cavity.	All wounds closed by Lembert sutures; cavity cleans'd and irrigated, no drain.	Died in 48 hrs.	Post-mortem: general peritonitis; half pint sanguinolent fluid in cavity.
26	J. H. Packard, Med. News, '87, i, 339.	33	2 hours	Marked collapse; sanguinolent vomit.	Eleven wounds in small intestine; omentum torn and bleeding; wound of extern. iliac vein beneath Poupart's ligam't; much blood in cavity.	Excision of 1 inch of small intes.; Lembert sutures to other wounds; ligat'n of external iliac vein; peritoneum cleansed; rubber drain.	Died in 15 hrs.	Post-mort.: evidences of peritonitis; ball found in contact with shaft of femur.
27	C. Kollock, Med. News, '87, i, 480.	15	6 hours	Deep-seated emphysema about ball w'nd; hepatic resonance; thirst & some shock; bloody stools; fæcal extravasation thro' ball wound.	Two perforations descending colon, one of ilium; bleeding epiploic appendage; much extravasated blood and fæces.	Lembert sutures to wounds; epiploic appendage ligated and cut off; abdomen cleansed.	Recovered.	. . . .
28	T. Billroth, Report of Klinik 1886 by R. von Hacker.	63 F.	32 hours	Collapse; vomited blood; belly swollen and tender; wound in seventh intercostal space below nipple.	Two wounds stomach near greater curvature; much clotted blood in cavity.	Transverse incision 6 in. long linea alba to 6th rib; 7th and 8th ribs exsected; Lembert sut. to stomach w'nds abdomen cleansed; drain; ball not found.	Died in 30 hrs.	Post-mortem: ball had wounded liver and aorta and lodged in right kidney, peritonitis and pleuritis present; vomiting had kept up continuously.
29	J. M. Gaston, Med. & Surg. Reporter June 12, '86, 739.	30	4 days	Continued extreme shock from time of accident until operation.	No visceral wound; considerable decomposing sero-sanguinolent fluid in cavity.	Seven punctures int. to let out gas; Lembert sutures to each of these; abdomen cleansed; drain.	Died.	Post-mortem: no visceral wound; ball could not be found.
30	Pozzi, Review de Chir., '87, i, 78.	13	8 hours	Vomiting; bloody urine; vesical symptoms most urgent.	Urine in peritoneal cavity; 3 perforations and 3 contusions of intestine; w'nd of bladder.	Partial resection of gut; 29 Lembert sutures to wounds; drainage.	Died in 52 hrs.	. . . .
31	W. W. Keen, Med. News, May 14, '87	18 F.	8½ hours	Wound in right hypochondrium, fracturing ninth rib; pale and weak; tenderness of abdom'n; had vomited some clear blood.	Wound of pylorus, 2d w'nd posteriorly; also, tear superior mesenteric vein and extravasation into mesentery; anterior border of liver "scalloped" by ball; 1½ inch wound small intestine; left kidney lacerated.	Wounds of stomach and int. closed by Lembert sutures; mesenteric vein ligated, also branch mesenteric artery; torn kidney removed; abdomen washed out.	Died in 14 days.	Albuminuria after operation; also vomiting and rigors; abdomen partially reopened 12 days after operation. Post-mortem: all wounds in good condition; gangrene of intest. and mesentery opposite wound of gut, which had healed.
32	Isaac Warren, N. Y. Med. Journal. Sept. 17, '87, 325.	18	24 hours	Tendency to vomit; shock; symptoms of peritonitis.	Five perforations small intestine, 2 of mesentery; general peritonitis well advanced.	Lembert sutures to wounds; abdomen washed out; rubber drain.	Died in 14 hrs.	No post-mortem; time of operation 1¾ hrs.; died of peritonitis.
33	C. K. Briddon, Med. News, '87, i, 52.	F.	18 hours	At first shock and vomiting, next day slight tympanites; primary symptoms continued.	Two wounds of stomach, 1 of omentum.	Lembert sutures to wounds; cavity cleansed; gauze packing left in.	Died in 36 hrs.	Post-mortem: general peritonitis; 4 overlooked wounds of jejunum discovered; time of operation, 2 hours.
34	Jos. M. Fox, Med. News, Nov. 12, 1887, 568.	18	3½ hours	Condition fair: slight fulness of abdomen; dull pain in umbilical region.	Four perforations of colon and jejunum; tear of omentum and of mesentery; considerable free blood; *no extravasation*: recent intussusception of ilium.	Wounds closed by Lembert sutures; belly cleansed; invaginat'n reduced.	Recovered.	Time of operation, 1 hour and 10 minutes.
35	Durante, Tr. Acad. Medicine, Rome, June, 1887.	Adult	. . .	Gunshot wound of abdomen.	One perforation small intestine.	Wound closed by Lembert sutures.	Recovered.	. . . .
36	G. S. Brown, Med. News, Feb'y 18, 1888, 180.	32	12 hours	All signs violent peritonitis; condition fair; penetration proved.	Six ozs. bloody serum in cavity; no visceral w'nds; intense peritonitis; ball not found.	Large irrigations; drainage.	Recovered.	Drain removed on 10th day.
37	Richard Douglas, N. Y. Med. Jour., June 9, 1888, 631.	Adult	8 hours	Profound shock; great pain; tympany; vomiting.	Four wounds small intestine, 2 of colon; extravasation of fæces; much free blood.	Lembert sutures to wounds; abdomen cleansed; no drain.	Died in 50 hrs.	Died of septic peritonitis; no post-mortem record.
38	Charles T. Parkes, Annals Surgery, Nov., 1887.	Adult	5 hours	Moderate collapse; much vomiting.	Five perforations of intestine; kidney (left) perforated and torn.	Perforations closed; kidney not removed.	Died in 24 hrs.	Died *from hæmorrh.* from torn kidney.
39	Charles T. Parkes, Annals of Surgery, Nov., 1887.	45	17 hours	Fæcal matter in w'nd; respir-thoracic; belly walls hard and motionless.	Large perforation of small intestine; bullet not located; large quantity of foul ichorous serum.	Closed by continuo's suture; free boric irrigation.	Died in 16 hrs.	Died of shock and septic poison.

TABLE I—*Continued.*—GUNSHOT WOUNDS.

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
88	J. D. Griffith, Ann. Sur., '88, viii, 100.	21	8 hours	Intense shock.	11 wounds small *intestine*, 2 of colon; 2-inch wound pyloric end of stomach; very great extravasation of food.	*Graft from meso-colon stitched into* stomach w'nd; 122 Lembert sutures.	Died in 11½ hrs	Could not approximate stomach w'nd without producing pyloric stenosis; time of operation, 4½ hrs.; did not come out of shock.
89	O. Halbert, Trans. Texas State Med. Ass'n, 1886.	21	. . .	. . . .	W'nd of liver; much blood in cavity.	Abdomen cleansed.	Recov.	. . . .
90	C. Fenger, Journal Am. Med. Ass'n, 1888, ii, 83.	50	6 days.	Upon admission, slight shock; *unsuccessful complete hydrogen test;* on 6th day gradual collapse & signs of peritonitis.	No visceral wounds found; large amount milky purulent fluid with fæcel odor in cavity.	Abdomen partially irrigated; drain.	Died 8 hrs. after op.	Post-mortem: number of localized periton. abscesses; intestines congested; no perforations or visceral wounds found.
91	C. Fenger, Ibid.	23	3 hours	Much shock; successful hydrogen test; blood from rectum.	14 perforations small intestine, 2 abrasions of bowel, 4 wounds of mesentary; great quantity of free blood in cavity.	2 resections of intestine; Lembert sutures to w'nds; gas insufflat'd to prove work, etc.	Died on table.	Duration of operation, 2¾ hrs.; transfusion at end. Post-mort.: another wound (near pylorus) discovered.
92	W. L. Schenck, Jr. Am. Med. Ass'n, Oct. 13, '88, 521.	49	16½ hours	Much shock and exhaustion; successful hydrogen test.	9 perforations of small intestine, 1 of mesentery.	Lembert sutures; abdomen cleansed.	Died in 2 hrs.	Time of operation, 3½ hours.
93	A. P. M. Vance, Pittsb. Med. Rev., 1888, 63.	17	1 hour.	No blood frym bladder before operation; great shock.	6 large wounds small intestine, blood, etc.	Wounds closed by continuous suture; drain.	Died in 95 hrs.	Post-m.: ureter divided by ball; blood in urine after operat'n.
94	A. B. Strong, Pittsburgh Med. Rev., 1888, 206.	20	20 hours	Shock; collapse. . . .	4 perforations small intestine; cavity filled with blood; violent hæmorrh.	Wounds sutured; cavity cleansed; drainage.	Died.	Never rallied; no post-mortem record.
95	A. B. Strong, Pittsburgh Med. Rev., 1888, 206.	25	. . .	General peritonitis . .	No visceral wounds found.	No drain	Died.	No post-mort. record.
96	J. E. Summers, Jr., Pittsb. Med. Rev., 1888, 240.	38	24 hours	. . . .	Wound of liver and of kidney; abd. full of blood.	Iodof'm gauze packing; abd. cleansed.	Died in 28 hrs.	Died from recurring hæmorr.; no post-mortem record.
97	J. M. Barton, Pittsburgh Med. Rev., 1888, 291.	F. 35	24 hours	Wound over stomach.	No visceral injury	Abdomen cleansed; drain.	Died in 20 days.	Died fr. sepsis spreading from ball track to peritoneum; post-m.: 2 w'nds stomach.
98	Wm. Mackie, Med. News, June 9, '88.	27	3 hours	Copious blood-tinged vomit; excrutiating pain referred to umbilicus; successful hydrogen test.	2 perforations of stomach; 2 of duodenum; 2 wounds of mesentery, 1 of mesocolon; profuse hæmor.	Wounds sutured; abdomen cleansed.	Died in 36 hrs.	Post-mort.: septic peritonitis; pint sanguinolent fluid in cavity.
99	N. Senn, Medical News, '88, ii, 202.	72	4 hours	Entrance wound in 6th left intercostal space space surrounded by emphysema; 7th rib fractured; bloody vomit; pain; partial collapse; successful hydrogen test.	1½ inch wound of greater curvature of stomach; also another perfor. of posterior wall (located by the gas); great hæmorrhage.	Lembert sutures to wounds; abdomen cleansed.	Died on table.	Post-m.: bullet passed thro' pancreas and spinal canal.
100	N. Senn, Medical News, Nov. 10, 1888, 528.	16	3 hours	Some shock; pain; signs of fluid in pertoneum; bullet passed in stool brought away by enema; successful hydrog. test.	10 perforations of small intestine, 4 of mesentery, 1 of anterior portion of rectum; much free blood and food and fæcal extravasation.	Lembert sutures; abdomen cleansed; glass drain.	Recovered.	. . . .
101	N. Senn, Ibid, 529.	18	12 hours	Immediate pain and shock; successful hydrogen test; beginning peritonitis.	5 perforations small intestine, advanced peritonitis, great am't free blood; intest. distended by blood clots 3 feet; 4 wounds of mesentery.	Lembert sutures to bowel; ligation of bleeding portions of mesentery *en masse;* irrigation; drain.	Died in 8 hrs. af. op'n	Post-mortem: general septic peritonitis.
102	C. Fenger, N. Am. Practioner, Feb., 1889, 85.	26	3 hours	No shock; no pain; negative air test.	None found	. . . .	Recovered.	. . . .
103	David Barrow, Jr. Am. Med. Ass'n, June, 18, '89, 835.	31	3½ hours	Great collapse; prolapse of omentum; fluid in peritoneum; gas from wound.	7 large perforations small intestine, 5 lacerations of mesentery; branches of superior mesenteric artery cut and bleeding.	W'nds sutured; vessels tied; irrigat'n.	Died in 3 hrs.	Died of shock from the prim'y loss of blood; no post-mortem.
104	Dav. Barrow, Ibid.	25	4 hours	Some shock, vomiting, condition fair.	9 wounds of small intest., several of mesentery, a quart of bloody fluid in cavity.	4 inches small intes. resected; wounds sutured.	Died in 15 hrs.	Spent an hour trying to return intes., then punctured them and let off flatus; no p.-m.
105	Dav. Barrow, Ibid.	29	6 hrs.	Very little shock . . .	None found	Irrigation, ...	Recov.	. . . .
106	Dav. Barrow, Ibid.	25	13 hours	Little to indicate serious injury.	Wound through right lobe of liver; bile duct cut; hæmorr. from liver w'nd; much free blood and bile	Liver wound packed with gauze; irrigation.	Died in 5 days.	No abdominal symptoms; died of cholemia; no post-m. rec.
107	O. H. Allis, unreported.	22	30 hours	Violent peritonitis and shock.	Wound thro' liver; ball imbedded in spine; violent general peritonitis.	. . . .	Died in 24 hrs.	. . . .
108	A. C. Bernays, N. Y. Med. Journal, May 4, 1889.	Adult	Soon.	. . . .	Perforations of stomach, duodenum and jejunum	. . . .	Recov.	. . . .
109	E. M. Moore, Jr., Med. Press, Western N. Y., April, 1889, 181.	47	8 hours	Some shock; unsuccessful air experim't.	5 perforations intestine, 7 of mesentery, 1 of omentum.	Exc'n of int. including 3 perf'ns; other w'nds sutured; irrigation; drain.	Died in 10 hrs.	Died of shock; operation lasted 2½ hrs; post-mort.: nothing further.
110	C. K. Bridden, N. Y. Med Jour., Mar. 9, '89, 255.	20	2 hours	Moderate shock; blood in urine.	15 perforations intestines	Resection 1½ inches small int.; other wounds sutured.	Died in 36 hrs.	Oper'n lasted 3½ hrs; post-m.: overlooked wound of bladder.

TABLE 2—STAB WOUNDS.

Case	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
1	G. Tiling, St. Pgb. Med. Woch., 1884, No. 24.	19	Soon.	Vomited much blood .	Much blood ; 1½ in. wound of gut ; curvature of stomach ; wounds of omentum.	Lembert sutures . .	Recovered.	. . . .
2	W. O. Roberts, Am. Pract., 1884, xxix, 13.	44	A few hours	Considerable hæmor. from wound.	2 wounds of small intestine, 2 of mesentery.	All sutured	Recovered.	. . . .
3	Barker, Lancet, 1886, i, 347.	Adult	3½ hours	. . . .	Incised wound of omentum.	None	Recovered.	. . . .
4	J. B. Roberts, Polyclinic, 1886, iii, 93.	F. 19	2 hours	Great shock, vomiting, violent pain.	2 wounds of small intestine.	Lembert sutures . .	Died in 2 days.	Post-m.: purul't peritonitis; one wound overlooked.
5	F. S. Dennis, Med. News, 1886, xlviii, 225–253.	22	. . .	. . . .	2 incised wounds of small intestine—1 cut serous and muscular coats of intest.	Czerny-Lembert sut.	Recovered.	. . . .
6	F. S. Dennis, Med. News, 1886, xlviii, 225–253.	57	3 hours	. . . .	None found.	None	Recovered.	. . . .
7	F. S. Dennis, Med. News, 1886, xlviii, 225–253.	25	Next day.	Had been stabbed in hernia ; hernia reduced ; peritonitic symptoms next day.	2 large wounds of small intestine.	Resection of gut, including wounds.	Died in a few hours.	Post-mort. : resection all right ; no other wounds.
8	F. S. Dennis, Med. News, 1886, xlviii, 225–253.	22	. . .	Considerable hæmor. from external w'nd.	5 wounds of small intestine.	Czerny-Lembert sutures.	Died in 40 hrs.	Post-mort.: wounds in good condition ; no other wounds.
9	J. McF. Gaston, Med. and Surg. Rep., '86, liv, 739.	30	4 days.	Much shock; afterward acute peritonitis.	Brush burn of colon.	None	Died shortly	. . . .
10	J. G. Brooks, Med. Herald, 1886, viii, 134.	11	A few hours	Great shock ; abdomen tense and dull.	Great quantity of blood ; cut and bleeding mesentery.	Vessels ligated . . .	Recovered.	. . . .
11	W. S. Tremaine, Med. News, 1886, xlix, 601.	18	10 hours	Opium poisoning also; free bleeding from wound.	None	None	Died.	Admitted with opium poisoning, fr. which he died.
12	J. B. Roberts, unpublished.	40	¾ hour.	Violent abdom'l pain; prolapse sm. knuckle intestine ; free hæm.	4 wounds of small intestine, 1 of colon; mesent'y transfixed.	All closed with Lembert sutures.	Recovered.	. . . .
13	Kwiecinski, Pregl lik. Krakow, '85, xxiv, 71.	20	At once.	Great pain ; vomiting.	3 wounds of small intestine.	Sewed.	Recovered.	. . . .
14	G. Gaulco, Genova, 1886. Due casi di enfer fer ferite di intestine.	30	. . .	Gored by cow.	No visceral wounds.	Abdomen cleansed .	Recovered.	. . . .
15	G. Gaulco, Genova, 1886. Due casi di enfer. fer ferite di intestine.	30 F.	. . .	. . . .	Wounds of intestines. . . .	Lembert sutures . .	Recovered.	. . . .
16	Wunderlich, N. Y. Med. Jour., 1887, i, 68.	19	6 hours	. . . .	¾ in. wound of gut—anterior curvature of stomach.	Lembert sutures . .	Died in 1 hr.	Post-mortem : wounds in good condition.
17	J. B. Deaver, Trans. Phila. Co. Med. Soc., Jan. 8, '87.	Adult	. . .	Much blood in peritoneal cavity; great shock.	Wound of spleen	Excision of spleen .	Died.	Post-mortem : wound of kidney, etc.
18	T. G. Morton, Ibid.	30	9 hours	Increasing pain about wound ; also emphysema ; no shock.	Wound of omentum, 1½ in.	Suture of omentum : ligature of bleeding omental artery.	Recov.	. . . .
19	J. Avery, Med. Age, 1885, iii, 412.	Adult	7 hours	Much shock.	2 wounds of small intestine, 1 of mesentery.	Wounds trimmed, & Glover's suture introduced.	Recov.	. . . .
20	Jos. M. Fox, Med. News, Nov. 12, 1887, 567.	32	3½ hours	Shock ; much hæmorrhage.	Large bleeding wound of liver ; much free and clotted blood.	Liver wound cauterized and hæmorr. stopped by actual cautery ; cavity freely irrigated.	Died in 20 hrs.	Post-m.: everything in good order ; died of loss of blood and subsequent shock.
21	T. G. Mòrton, Med. News, Nov. 26, 1887. 632.	F. 20	2 hours	Penetrating w'nd near umbilicus; slight abdominal pain ; no other symptoms except protrus'n small piece of omentum.	None found ; no blood . . .	Omentum washed and returned.	Recovered.	Insisted upon going home and attend'g to househ. duties next day ; during conval. was not confined to bed ; no hernia in wound afterwards.
22	Burckhardt, Cent. f. Chir., No. 5, 1887.	25	. . .	Increasing collapse ; percussion dulness of whole belly.	½ inch wound left lobe of liver, bleeding violently ; was 2 inches deep ; belly full of blood.	Liver wound packed wi. strips of gauze, abdomen cleansed, drainage.	Recov.	At end 8 weeks a lost strip of gauze presented and was removed ; wound then ceased suppurating ; sinus closed in 7 mos.
23	J. M. Barton, Phila. Med. Times, Ap. 6, 1888, 428.	25	4 hours	Venous bleeding from wound ; shock from loss of blood.	Wound of anterior border of liver, ⅝ in. wound transverse colon ; free hæmorrhage from latter.	Lembert sutures to colon wound, nothing to liver—was not bleeding ; abd. cleansed; no drain.	Recov.	. . . .
24	Burckhardt, Jour. Am. Med. Ass'n, July 9, 1887, 62.	30	2 hours	Entire collapse ; belly full of fluid.	Wound large curvature of stomach ; great am't free clots and blood ; very free bleeding from wound.	2 rows Lembert sutures.	Recov.	. . . .
25	J. H. Parkinson, Sacramento Med. Times, April, '87, 62.	F.	2 hours	Much and repeated bloody vomit.	Extensive wound posterior wall of stomach ; much free blood.	W'nd closed by Lembert sutures ; uncontrollable deep bleeding ; free irrigation.	Died in 15 hrs.	Post-m.: another w'nd of stomach found ; also, perforation left renal vein.

TABLE 2.—STAB WOUNDS—*Continued.*

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
26	H. C. Dalton, Annals Surg., Feb., 1889, 91.	28	5 hours	Great agony; protrusion & strangulat'n ⅔ of stomach; copious bloody vomit after reposition of stomach.	¼ inch wound anterior surface of stomach; free blood in cavity.	Lembert sut.; cavity mopped out; no drain.	Recov.	Nourished wholly by enemata for 10 days.
27	H. C. Dalton, Ibid, p. 94.	F. 24	Soon.	Fell upon fence picket; wound 2½ inches in left axillary line bet. 8th and 9th ribs; omentum and 4 in. small intes. protruding; pike entered abdomen thro' thorax.	No visceral injury found; much free blood; wound of diaphragm.	Bowel and omentum cleansed and replaced; wound of diaphragm sutur'd with catgut; abdomen cleansed; no drain in abdomen.	Recov.	Drain into thoracic wound.
28	H. C. Dalton, Ibid, p. 97.	69	3 hours	Excrutiating belly pain; fair condition; prolapse of 2 inches omentum,	3 perforations small intestine; large amount free blood.	Lembert sutures; abdomen cleansed; glass drain.	Died in 31 hrs.	Vomiting, etc., at end 24 hours; no postmortem record.
29	H. C. Dalton, Ibid, p. 97.	26	3 hours	*Negative hydrog. test.*	*Considerable free blood; no visceral injury.*	*Irrigation; glass drain.*	Recov.	Symptoms of peritonitis at once stopped by large dose salts on second day.
30	H. C. Dalton, Ibid, p. 97.	22	2 hours	Condition good	Small amount blood; no visceral injury.	Abdomen cleansed; no drain.	Recov.	. . . .
31	H. C. Dalton, Ibid, p. 98.	24	Few hours	Great shock; intense pain; drunk, and had walked far after being injured.	Small am't blood; no visceral injury discovered.	Abdomen cleansed .	Died in 36 hrs.	No post-mort. record.
32	Molitor, Archiv. Med. Belges, Brux, 1887, 173.	. . .	. . .	Intestine protruding .	2 wounds intestine, 1 of mesentery.	Intestine sutured; mesentery ligated.	Recov.	. . . .
33	Postemski, Bull. d' Acad. Med. di Roma, 1887-'88, ix, 272.	. . .	. . .	Signs of hæmorrhage.	Wound left lobe liver 2¾ in. in length, ⅓ inch deep; much free blood.	Liver wound closed by fine gut sutures; bleeding then stopped.	Recov.	. . . .
34	N. B. Carson, St. Louis Cour. Med. 1887, No. 3, 226.	F. 40	36 hours	Condition good; abd. distended and somewhat tender; pulse intermittent.	Wound of liver and gall-bladder.	Suture of liver . . .	Died.	Post-mortem: peritoneum "almost normal."
35	Tuholski, St. Louis City Hos. Records, Jour. Am. Med. Ass'n, 1887, Nov. 5, 581.	21	. . .	Condition good	None found	Abdomen cleansed .	Recov.	. . . .
36	D. V. Dean, Ibid. .	32	. . .	Condition good	Abdomen contained much decomposed blood and serum; no visceral wounds.	Cleansed	Died.	No post-mort. record
37	D. V. Dean, Ibid. .	30	. . .	Condition good	No visceral injury.	Peritoneum cleans'd	Recov.	. . . .
38	Gal, Centralbl. für Chirurg, '86, 686.	45	9 hours	Gored by cow; condition good.	No visceral wound	. . . .	Recov.	. . . .
39	Dav. Prince, Tran. Am. Surg. Ass'n. 1887, 214.	Adult	. . .	. . . .	¾ inch wound of stomach .	W'nd sutured; drain	Died in 3 hrs.	. . . .
40	A. P. M. Vance, Am. Prac. and News, 1887, iv, 195.	22	2 hours	Profound shock; tense belly walls.	Wound transverse colon; large amount blood and fæces in cavity.	Wound sutured and abdomen irrigat'd; rubber drain.	Recov.	. . . .
41	J. H. Packard, Med. and Surg. Rep'r, Jan. 5, 1889, 20.	12	2 hours	Marked collapse; some protrusion of intestines; had fallen upon moving circular saw.	1 entire division of intestine, several tears of omentum; 2 abrasions of intestine.	Lembert sutures to wounds; omentum ligated; irrigation and drain.	Recov.	. . . .
42	M. H. Richardson, Boston M. and S. Jour., Sept. 8, '87.	F. 23	Soon.	No symptoms.	None found	Abdomen explored; no drain.	Recov.	. . . .
43	Girdlestone, Australian Medical Jour., '87, ix, 315.	41	12 hours	No protrusion at first, but before reaching hospital 12 inches intestine were out; nausea, but condit'n fair; cut by glass.	Much blood; no visceral wound, but prolapsed gut, dry and very dirty.	Abdomen cleansed; drain.	Recov.	. . . .
44	T. J. Bennett, Daniels' Texas Med. Jour, '87, 3, 213.	17	16 hours	Great pain; blood and food discharged thro' wo'd; condition fair.	Much food, fish bones and free blood; 1½ in. wound of stomach; wound of omentum.	Stomach sutured; abdomen cleansed; drainage.	Recov.	. . . .
45	J. W. Heddens, Pittsburgh Med. Rev., Aug., 1887, 234.	26	. . .	. . . .	Considerable free blood in cavity.	Abdomen cleansed; no drain.	Recov.	. . . .
46	C. A. Jersey, Pittsburgh Med. Rev., Oct., 1887, 281.	27	36 hours	Peritonitis.	. . . .	Drainage	Died.	Died of shock; no other details.
47	A. P. M. Vance, Pittsb. Med. Rev., 1888, 63.	23	3 hours	Two stab wounds of abdomen.	No visceral wounds.	Abdomen irrigated; no drain.	Recov.	. . . .
48	C. B. Penrose, Pittsb. Med. Rev., 1888, 63.	40	5 hours	. . . .	Wound of transverse colon.	Wound sutured; abdomen irrigated.	Died on 3d day.	Post-mort.: abdomen in good condition; cerebral embolism.
49	A. C. Bernays, Pittsburgh Med. Rev., 1888, 89.	35	10 hours	. . . .	1 wound of mesentery, 1 *of* omentum; *hæmorrhage.*	*Wounds sutured;* abdomen cleansed; no drain.	*Recov.*	. . . .
50	A. C. Bernays, Ibid.	38	. . .	Five separate stabs over liver area.	5 extensive wounds of liver.	Wounds sutured; no drain.	Died.	Suicide; no post-mortem record.

TABLE 2—Stab Wounds—*Continued.*

Case	Operator and Reference	Age	Time after injury	Special Symptoms	Intraperitoneal injuries, etc , found	Treatment of intra peritoneal injuries	Result	Remarks and post-mortem
51	E A Waggener, Pittsb Med Rev , 1888, 239	26	38 hours	General peritonitis .	. . .	Drainage . .	Died in 52 hrs	Died of continued peritonitis, no post m record
52	C B Penrose Pittsburgh Med Rev , 1888, 291	30	Soon	. . . .	Bleeding merenteric vessels, serous coat intestines cut free blood	Vessels tied , Lembert sutures	Died on 3d day	Post mortem no peritonitis
53	C B Penrose Ibid	38	Soon	Six - inch transverse wound of abdomen most intestines outside cavity	No visceral injury	Bowels cleansed and returned, abdom'n cleansed , glass drain	Died in 8 hrs	Died of shock .
54	Jno Ashhurst Jr Penn Hosp Rep , 1888 Case 172	28	Soon	. . . . . .	4 wounds small intestine, 1 of bladder	Lembert su , irrigation , glass drain .	Died in 33 hrs	Post mortem peritonitis due to infiltrat n of urine from overlooked w'nd of bladder near trigone
55	Jno Ashhurst, Jr , Ibid, Case 173	38	Soon	Stabbed with ice pick , great shock	1 intra peritoneal wound of bladder	Wound sutured by Lembert method rubber drain,	Recov	. . . .
56	Wm Hunt, Ibid, Case 552	27	Soon	Omental protrusion	2 perforations small intest	Lembert sutures , irrigation, no drain	Died on 5th day	Died of delirium tremens , post mortem abdomen in excellent condition
57	C B Penrose, Ibid Case 911	30	Soon	Three stabs of abdo'n	2 wounds liver, great hæmorrhage , 2 wounds peritoneal coats of intestines	Intestinal wound sutured liver wound packed with catgut	Died	Post mortem no peritonitis
58	C B Penrose, Ibid, Case 1802	38	Soon	. .	No visceral lesions	. .	Recov	. . . . . .
59	T G Morton, Ibid Case 1467	26	Soon	Two stabs of abdomen great shock	3 omental wounds several tears of intestinal walls kidney w nded and bleeding , great hæmorrhage	Wounds sutured irrigation , glass drain	Died in 19 hrs	Died of shock .
60	John H Packard, Ibid	22		Omental protrusion	Wound of omentum	Wounded part omentum ligated and cised irrigation no drain	Recov	. . . . . .
61	Chas Ball, Dublin Jour Med Sci , 1888, lxxxv 357	15	4 hours	Chisel wound of abd vomiting of blood stained material great shock, signs of hæmorrhage	½ in wound greater curvature of stomach much free blood from wounded vein of meso-colon	Lembert sutures abdomen cleansed.	Recov	. . . .
62	A H Perfect, N Y Med Jour , June 30, 1888 704	45	Soon	Great hæm protrus'n portion of liver also portions of omentum and hepatic flexure of colon	Wound of liver 3½ in long, ¾ inch deep	Liver w'nd sutured and hæmorrhage ceased	Recov	Pleura opened also by axe and lung wounded 8th rib divided
63	J C Sexton, Med News Dec 15 1888 672	29	9 hours	Shock, great pain, prolapsed knuckle of intestine extravasat n of fæces through abdominal wound	2 large wounds small intestine large am t extravasated blood and fæces	Lembert sutures to wounds, abdomen cleansed, irrigated and drained	Recov	. . . .
64	J C Sexton, Ibid 674	29	6 hours	Struck by fragment from cannon and cicatrix from former abd section for traumatism (88 days old) torn open, great shock, intest and mesentery prolaps'd	No visceral wounds no sign of wounds which had previously been sewn	Abdomen irrigated	Recov	. . . .
65	T W Huntington, Sacramento Med Times, Oct , 1888, 452	24	3 hours	blood free hæmorr from wound	blood in cavity no ral wounds blood apparently came from veins near kidney	Abdomen cleansed	Recov	. . . .
66	Finlay, Edinburgh Med Jour , Ap , 1889, 925	24		Prolapse of intestine , two abd l wounds	Wounds of small intestine	Continuous suture to intestinal wounds	Recov	. . . .
67	J Grindon St Louis Cour Med 1887, 11	F 30	1 hour	Condition good .	Wounds of small intestine	Excision of portion small intestine,	Recov	. . . . .
68	Jno Ashhurst, Jr ' unreported	23	1 hour	Condition good . .	2 large wounds ascending colon 1 punctured wound colon much extravasated blood and fæces colon distended with blood	Wounds sutured , glass drain	Died in 40 hrs	Post m another large w nd of colon found , several pints disintegrated blood in colon and rectum
69	T G Morton, unreported	Adult	Soon	Condition poor signs of hæmorrhage .	3 wounds descending colon great extravasation of blood and fæces	Wounds sutured bleeding points ligated abdomen irrigated	Died in 30 hrs	Post m great hæmorrhage from giving way of mesenteric vessel
70	J M Foxl unreported	19	2 hours	Great shock	Bleeding vessels of stomach and of pylorus clots and blood in cavity	Wounds sutured bleeding controlled no drain	Died in 33 hrs	Peritonitis next day, abdomen reopened, irrigated and drained , post-m wound of liver, peritonitis
71	Benisovitch Khirurgetchesky Vestnik, No 2, 1887 887	18	3 hours	Continuous nausea & hæmorrhage from wound shock	Extensive bleeding wound of serous & muscular coats of stomach belly filled with clots and blood	Irrigation repair of wound drain	Recov	
72	O H Allis, unreported	20	3 hours	Some shock signs of intra periton l hæmorrhage , unsuccessful hydrogen test	Large transfixing wound of root of mesentery terrific hæmorrhage transfixing wound small intest each extrem ½ inch long	. . . .	Died on table	Died of frightful hæmorrhage

TABLE 2.—STAB WOUNDS—*Continued.*

No.	Operator and Reference.	Age.	Time after in-jury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intra-peritoneal injuries.	Result.	Remarks and post-mortem.
73	C. C. Jones, N. Y. Med. Jour., May 12, 1889.	19	. . .	Protrud'g bit of omentum; little shock.	¼ inch wound of stomach; much extravasated food and blood.	Wound sutured; abdomen cleansed.	Recov.	. . . .
74	Baudens, Ann. of Surg., May, 1886, 392.	. .	. . .	. . . .	2 perforations of intestine .	Wounds sutured. . . .	Died.	Post-mortem: another wound, of cæcum, discovered.
75	Jobert, Günther, Operationslehre.	23	. . .	Prolapse of intestine.	Wound enlarged; 2 wounds of intestine.	Wounds sutured. . .	Died in 38 hrs.	Post-mortem: another perforation found.
76	Davids, Günther, Operationslehre, iv, 163.	Adult	Soon.	Gored by cow; protrusion of intestine.	2 wounds protruded intest.	Gut sutured.	Recov.	. . . .
77	Koenig, Trans. 18th Cong. German Surg., Med. News, June 22, 1889, 694.	Adult	14 hours	. . . .	. . . .	. . . .	Recov.	No details. . . . . . .
78	Geo. Lawson, Lancet, Mar. 3, '88.	. . .	2 hours	Wound in fifth intercostal space near nipple; extravasation of food through wound; much shock.	1½ in. w'nd cardiac extrem. anterior wall of stomach; wound of diaphragm.	Stomach wound sutured; irrigation of peritoneum and pleura; drain to peritoneum.	Died in 12 hrs.	Died of asphyxia and peritonitis; post-m.: wound and collapse of lung; 8 oz. fluid in pleura; 4 oz. in peritoneum.
79	J. A. Black, Daniels' Texas Med. Jour., Dec., 1887.	17	12 hours	Great pain; extravasation of food thro' wound.	Large wound stomach and omentum; fish bones and other food in cavity.	Wounds sutured. . .	Recov.	. . . .

TABLE 3.—RUPTURED BLADDER.

No.	Operator and Reference.	Age.	Time after In-jury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of Intra-peritoneal Injuries.	Result.	Remarks and post-mortem.
1	Walters, Pittsburg.	22	10 hours	Signs of active peritonitis.	Much blood and urine; extensive tear at base of bladder.	Removal of foreign contənts; drainage tube.	Recovered.	Catheter in bladder also.
2	W. T. Bull, An. of Surg., 1885, i, 67.	46	13 hours	Great shock; bloody urine; dulness half way to umbilicus; catheter went beyond bladder.	3¾ inch rent of posterior wall of bladder.	7 Lembert sutures. .	Died in 7 hrs.	Also had fractured pelvis.
5	*Jos. M. Fox*, Med. News, Dec., '87.	*38*	*19* hours	*Great pain about bladder and desire to micturate; bloody urine; great shock.*	*Much blood and urine; 2½ inch triangular rent in anterior wall of bladder.*	*15 Lembert sutures*; soft catheter in urethra.	Died in 42 hrs.	*No abdominal drain*; post-mortem: bladder wound firm.
4	J. Duncan, Lancet, 1886, ii, 399.	38	22 hours	Shock; desire to urinate, but no power; bloody urine, peritonitis, vomiting.	Blood and urine; 2½ inch rupture of posterior bladder wall.	Glass drain sutured into bladder w'nd.	Died in 55 hrs.	Suppression of urine.
5	Wm. McCormac, Lancet, 1886, ii, 1118.	37	27 hours	Fluid present in abd.; signs incipient peritonitis; nausea.	Large amount bloody fluid; 3 inch rent upper portion of bladder wall.	12 Lembert sutures.	Recovered.	Urine passed voluntarily from first
6	McGill, Lancet, 1886, xxi, 972.	. . .	3 days.	Insensible for time; pain; bloody urine; could not urinate, though had desire; incipient peritonitis.	Pint of urine; 4 in. rent of apex & fundus of bladder.	11 sutures.	Died in 17 hrs.	Post-mortem: bladder wound firm.
7	C. Heath, British Med. Jour., '86.	Adult	40 hours	Tense belly; bloody urine by catheter; injected water felt through abdomen by patient.	Rent of bladder.	Continuous suture .	Died in 6 days.	*Post-mortem*: suture had given way.
8	Hofmokl, British Med. Jour., 1883, i, 560.	Adult	. . .	Principally those of extra-peritoneal rupture.	Intra- and extra-peritoneal rupture of bladder; great infiltration of tissue with blood.	Partial suture; upper portion left open and drained.	Recovered.	. . . .
9	MacCormac, Lancet, 1886, ii, 1118.	33	19 hours	95 oz. blood-tinged urine drawn; walked a mile to hospital day after injury.	4 inch median vertical rent of bladder.	16 Lembert sut.; peritoneum at sides divided to relax bladder walls.	Recovered.	. . . .
10	A. Willett, St. Bartholomew Hosp. Rep., 1876, 209.	48	29 hours	Shock & pain; bloody urine by catheter; later, symptoms of peritonitis.	3½ inch rent across fundus of bladder.	Interrupted sutures.	Died in 23 hrs.	Post-mortem: portion of w'nd found open.
11	A. W. M. Robson, MacCormac's Monograph, p. 53, 1887.	68	3 hours	Frequent desire but could not micturate; bloody urine by catheter; frac. right side pelvis; patient conscious, pulse feeble.	None found.	Peritoneal portion of bladder not involved.	Die[illegible] a[illegible] ho[illegible]	[illegible] bdom'l [illegible] ladder [illegible] blood and urine; bladder torn and penetrated by fragm'ts of bone.
12	Socin and Keyser, Annals Surgery, Feb., 1887.	20	. . .	Reten. of urine; bloody fluid by cath.; pain above pubes; hiccough.	Extra-peritoneal half-inch rent of bladder; no involvement of peritoneal cavity.	Bladder sutured to abd'l wall; drain tube into cavity of bladder from above	Recovered.	Tube kept in 9 days. .
13	Sonnenburg, Centralbl. f. Chirurgie, 1885, 838.	. . .	2 days.	Clear urine by catheter; signs of peritonitis began in 24 hrs.	Rent from vertex to neck along posterior wall.	No sutures; drain tube into bladder from above.	Died on 4th day	Intense peritonitis after operation.

TABLE 3—RUPTURED BLADDER—*Continued.*

Case.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal injuries, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
14	C. J. Symonds, Trans, Clin. Soc. London, '88, xxi, 228.	F. 7	7 hours	Great collapse; great pain in epi- but none in hypogastric reg'n; blood-streaked vomit; pain over bladder began 7 hours after injury; percussion dulness to umbilicus; almost pure blood by catheter.	Y-shaped rent in vertex of bladder, partly intra- and partly extra-peritoneal; pelvic peritoneal cav. full of blood and urine.	Rent united by 12 Lembert sutures; 2 pints blood and urine sponged out; no drain.	Died in 7 days.	Post-mortem: suppurative peritonitis; wound had leaked; 2 days after operat'n wound had been opened and belly irrigated; urinary discharge thro' same from then till death.
15	T. P. Teale, MacCormac's Mono., 1887, p. 54.	25	2 hours	Kicked in abdomen; pain in hypogastrium; inability to micturate; no shock; subsequently tympanitis and percussion dulness over flanks.	Intestines floating in large quantity straw-colored fluid; vertical 1 inch rent of fundus.	Abdomen cleared of urine; Lembert sutures to rent, drainage by tube thro' perineum.	Died in 19 hrs.	Secondary hæmorrh. from perineal w'nd; no peritonitis.
16	W. J. Walsham, Lancet, '88, i, 173.	21	13 hours	Little or no shock. . .	Rent of bladder 1½ inches.	Rent closed by nine Lembert sutures; no drain.	Recovered.	. . . .
17	Halstrom, Lancet, June 28, 1888.	21	13 hours	No shock.	Rent 1½ inches long	9 Lembert sut.; catheter first day; no drain; boracic irrigation.	Recovered.	. . . .
18	T. Holmes, Lancet, July 23, 1887.	24	6 hours	Abdom'l pain; blood-tinged urine by cath.; point of catheter felt in abdominal cavity.	2-inch rent.	8 Lembert sutures; no drainage.	Recovered.	. . . .
19	E. L. Keyes, N. Y. Med. Rec., Dec. 24, 1887.	22	22½ hours	Some bloody urine by catheter; incipient peritonitis.	Rent 1½ inches backward. .	9 Lembert sutures; permanent catheter; glass abdominal drain.	Died in 18 hrs.	Post-mort.: death from shock and alcoholism.
20	H. H. Grant, Jour. Am. Med. Ass'n, July 28, 1888, 118.	19	5 hours	Shock; bloody urine by catheter; bladder collapsed.	2½ inch rent; fracture horizontal ramus near pubis.	11 Lembert sutures; rubber drain; irrigation.	Recovered.	Catheter used every 2 hours subsequently
21	H. O. Hitchcock, Pittsburg Med. Rev., Mar., '88, 55	34	18 hours	Shock; free fluid in abdomen; could not micturate; 11 pints bloody urine by catheter; no peritonitis.	Rent 2 inches, ...	Sutures; apposition not entirely accomplished; irrigation; no drain.	Died on 2d day.	Permanent catheter.
22	H. F. Stanton, Indian Med. Gaz., Jan., 1889, 22.	Adult	50 hours	Patient unable to lie down; had been kicked in abdomen	Extensive tear of posterior wall.	Lembert sutures . .	Died in 24 hrs.	No other details. . . .
23	A. Blum, Archiv. gén. de Med., July, 1888, p. 5.	Adult	24 hours	Horse kick of abdom.; could not micturate; much clear urine withdrawn by cath., no signs of ruptured bladder; operation undertaken for peritonitis	1-inch tear of fundus; much straw-colored, clear serum in peritoneal cavity; bladder wound edges not infiltrated with blood.	10 Lembert sutures; no bladder wound; abdomen cleansed; permanent drain.	Recovered.	Cystitis on 13th day. .
24	W. H. Brown, Lancet, Aug. 4, 1888, 208.	20	11 hours	Horse fell upon him; peritonitic decubitus, distended abdomen; pure blood by cath.; great pain; inability to pass urine.	Rent posterior wall far forward; bloody fluid in peritoneum.	Abdomen irrigated; abd'l drain; catheter in bladder; wound inaccessable to suture.	Died in 11 hrs.	No post-mortem . . .
25	H. O. Hitchcock, Pittsb Med. Rev., 1888, 55.	34	36 hours	Passed bloody urine; fluid in, and distension of, belly; some shock; 11 pts. bloody urine by catheter	Bifid rent, 6 inches long, of posterior portion of fundus.	Lembert sutures to tear; abd. cleansed; catheter tied in.	Died in 20 hrs.	Never recovered from shock.
26	C. K. Briddon, N. Y. Med. Journal, March 9, 89	Adult	3d day.	Intense pain in abd'n and head of penis; retraction of testes; no blood in urine except at one time signs of peritonitis.	Rent in posterior wall of bladder, several pints of bloody fluid in cavity.	Rent sutured	Died in 14 hrs.	No post-mort. record.
27	R. Morrison, Brit. Med Jour, Jan. 26, 1889	25	. . .	Great collapse; distended cystitic bladder had given way to slight traumatism; signs of peritonitis.	¼-inch rupture of pouch between ribs of bladder in upper posterior portion.	Rent sutured	Died in 4 days.	Died of peritonitis . .

TABLE 4.—RUPTURED OR CONTUSED ABDOMINAL VISCERA.

No.	Operator and Reference.	Age.	Time after injury.	Special Symptoms.	Intraperitoneal Lesions, etc., found.	Treatment of intraperitoneal injuries.	Result.	Remarks and post-mortem.
1	Bouilly, Bull. et Mem. Soc. de Chir., 1883, 690.	29	23 hours	Signs of incipient peritonitis; fæcal vomit'g.	3-inch rupture of small intestine; also gangrenous bruise of intestine above rupture.	Resection 5 inches small intestine.	Died in 10 days.	Post-mort.: gangrenous portion had given way after manipulation.
2	Chevasse, Ib., 1885, 123.	23	. . .	Shock at first, then peritonitis.	Colon badly contused in two places; intest. and meso-colon infiltrated with blood.	None	Died in 6 days.	. . . .
3	E. A. Waggoner, St. Louis Cour. of Med., 1886, xvi, 204.	8	27 hours	Walked 400 yards; great shock, followed by violent peritonitis.	Rupture of intestine 2½ feet above ileo-cæcal valve; much fæces.	Sutured	Died in 2 hrs.	. . . .
4	T. M. Girdlestone, Australian Med. Journal, 1883.	22	4th day,	Shock, which was followed by development *of peritonitis; vomit'g.*	Almost complete rupture of ileum; tears of omentum.	Excision of wounded bowel.	Died in 1½ hr.	. . . .
5	Fitzgerald, Ibid, 1883, 264.	58	20 hours	All signs of double strangulated hernia. (His truss had been pressed violently against descended hernia.)	Ruptured small intestine.	Sutured	Died in 8 hrs.	. . . .
6	Dixon, Annals of Surg., v, '87, 321.	32	7 days.	Fell down elevator; profound shock, *vomit'g*, intense pain in back, loins, and over right *hypochondrium*; fracture 10th dorsal vertebra; later, rise temperature, moderate tympanitis, and slight enlargement and dulness over cæcal *region*; aspirator needle brought fluid like bile.	Gall-bladder ruptured and collapsed; *infiltration of* much bile along posterior border of ascending colon.	Cystic duct ligated *and gall-bladder* dissected out by knife and cautery; adjacent tissues sutured over stump.	Died in 17 days.	Increasing icterus and *diarrhœa* after operation; some adhesions in peritone'm; obstruction of common duct by impacted gall-stone.
7	M. Chauvel, Le Progrès Médical, Mar. 7, '85, 193.	. . .	3 days.	Kicked in abdomen by horse; three days afterwards signs of general peritonitis.	Transverse meso-colon and right half pancreas contused.	Not mentioned . . .	Died 7 days af. injury.	Abd. simply opened; lesions only found post-mortem.
8	J. Croft, Lancet, 1887, i, 915.	34	24 hours	Abdom'n stamped upon; shock; peritonitis.	Rupture lower portion of ileum extending thro' ¾ths of its circumference; extravasation of fæces.	Abdomen cleansed; wound of ilium sutured to abdominal wound; time, 1½ hours.	Recov.	Died 29 days later of shock after operat'n for artificial anus closure lasting 2½ hours.
9	J. Croft, MacCormac's Monogr., 1887, p. 55.	25	13 hours	Run over by cab; pain and much shock; signs of internal hæmorr.; fluid in flanks.	Ruptured spleen; fractured 8th and 9th ribs; 2 pints of free blood in cavity.	Spleen excised; abdomen cleansed.	Died in a few hours.	Never recovered from shock. *Post-mort.*: clots in renal vessels.
10	Demons, Cong. F. de Chirurg., 1885.	Adult	. . .	Crushed bet. cart wheel and wall.	Circular rupture of intestine.	Lembert sutures to bowel wound; cavity "purified."	Died.	Post-mort.: a second overlooked rupture of bowel *found*.
11	Gregory, MacCormac's Monogr., 1887, p. 56.	. . .	. . .	. . . .	Rupture of ileum.	Suture of bowel wound.	Died.	Operation not undertaken until hope had been *practically* abandoned.
12	A. O. Mackellar, MacCormac's Monogr., '87, 56.	57	29 hours	Struck by shaft of cart; collapse, pain, signs of internal hæmorrhage; dulness in flanks.	Rupture of spleen; fracture of rib; much altered blood.	Irrigation, drainage.	Died on 3d day.	Operation not undertaken until *marked* peritonitis present. Post-mort.: rupture of *kidney* also.
13	Edmund Owen, Lancet, ii, 1885.	Adult	41 hours	Fell across board placed edgewise; shock; peritonitis.	One-inch rent of ileum. .	Intestine clamped and artificial anus formed.	Died 8 hrs. af. oper'n.	No post-mortem. . . .
14	Alf. Willett, MacCormac's Mono., 1887, 56.	32	Soon.	Fell four feet upon back; immediate epigastric pain and collapse; bowels acted freely, vomiting incessant; emphysema & crackling around umbilicus.	Cavity full of blood; rupture *of right lobe of liver* extending from hilus.	Several pints blood withdrawn.	Died 4 days af. oper'n.	Post-mortem: large branch of portal vein torn.
15	Atkinson, British Med. Jour., 1888, i, 357.	28	9 hours	Fell against edge of table; some collapse; abdomen retracted; vomiting.	½-inch rupture of ilium near duodenum; bloody fluid; marked peritonitis.	Wo'd closed by Lembert sutures; boracic irrigation, glass drain.	Died.	Belly reopened following day and abdom'n irrigated again.
16	McBurney, N. Y. Med. Jour., Jan. 26, 1889, 106.	12	8 hours	Fell across railroad rail; profound shock; pain in back. Later, abd. flat, dulness in flanks; shock improving.	Quart of free blood; extravasations about colon and omentum; branch of pancreato-duodenal artery ruptured and bleeding.	Vessel ligated, abdomen cleansed.	Recov.	. . . .
17	W. Mayo Robson, Proc. Clin. Soc. London, '88, 122.	24	48 hours	Continuous vomit'g and other signs of peritonitis; condition bad.	¾-inch rent of small intestine thro' serous and muscular coats only; also a complete rupture of small bowel with great extravasation of fæces.	Lembert sutures to partial rupture, artificial anus made of other wound; drain, irrigation.	Died 2 hrs. af. oper'n.	Post-mortem: rupture was 2 feet below pylorus; diffuse purulent peritonitis.
18	C. K. Briddon, N. Y. Med. Journal, June, 1889.	39	30 hours	Hit in abdomen by pole of wagon; great pain, shock, and signs of hæmorrhage at *first*; great distension of abdomen at time of operation.	Small rupture of ileum *leading into mesentery*; much free blood; hæm*orrhage* still going on; great extravasation of fæces.	Suture of wounds, ligation of arteries, incisions and subsequent suture of intestines to allow escape of gas; irrigation, drain.	Died in 20 hrs.	Post-mort.: pint blood from overlooked bleeding intestinal artery; peritonitis.

THE CLINIC.

CLINICAL LECTURE UPON DISEASES OF WOMEN, JEFFERSON MEDICAL COLLEGE HOSPITAL, OCTOBER 29, 1889.

BY THEOPHILUS PARVIN, M.D.,
PROFESSOR OF OBSTETRICS AND OF THE DISEASES OF WOMEN AND CHILDREN IN THE JEFFERSON MEDICAL COLLEGE, PHILADELPHIA, PA.

[Reported by Dr. Edward E. Graham for THE JOURNAL.]

Gentlemen:—The first patient presented you to-day is one upon whom I did a laparotomy three weeks ago for ectopic gestation. It was a case of tubal pregnancy; that is to say, the gestation cyst occupied one of the tubes. This patient was nursing at the time certain symptoms pointed to a new pregnancy, and as she herself said, she would have believed herself pregnant if she had not had for several days a discharge of blood from her womb, which she believed was the monthly flow. But the flow lasted longer and was more profuse than usual, and finally at two different times pieces of membrane, probably the decidual membrane, were discharged. She had a painful and growing tumor near to the uterus upon the left side. She had been an out-patient of the Pennsylvania Hospital, where my friend Dr. Baldy saw her two or three times, and finally made the diagnosis of ectopic gestation as most probable. She was taken one day with very severe pain at home, and sending for her family physician, Dr. Orville Horowitz, he advised her immediate removal to this hospital. The operation was done the next morning after her arrival. A drainage tube was introduced after the removal of the enlarged oviduct and the ovary, and after thorough washing out the peritoneal cavity, the tube was removed at the end of forty-eight hours, and as you now see upon exposure of the abdomen, the incision, only about 3 inches long, has entirely healed. A woman after an abdominal section should remain in bed for at least three weeks, lest perfect and firm union of the incision fail, and a hernia result. More than once I have allowed patients to get up after a much shorter confinement to bed, and a hernia has been the consequence.

Case 2. Increase of Fat in the Abdominal Wall Simulating a Tumor.—The next patient is 45 years old, is married, and has given birth to two children. She has observed during three years a constant increase in the size of the abdomen, and fears that she has "a tumor;" she comes here to have this question settled. Upon palpation no tumor can be felt, but placing a hand upon each side of the abdomen, the ulnar border being below, and my back turned towards the woman's face, I endeavor to approximate my hands; you see that they include a great mass of tissue quite outside the abdominal cavity, and that this cavity is not at all enlarged. The apparent tumor is not in the usual sense of the term a tumor, not a neoplasm, but simply due to a great accumulation of fat in the abdominal wall. This condition is sometimes spoken of as a pendulous abdomen, but it is only the anterior abdominal wall which is pendulous. When she is sitting this hanging wall rests upon her thighs, and in walking too it is an inconvenience. Probably she would be made more comfortable by wearing a suitable bandage, not necessarily one made by those dealing in bandages, but such a one as any ingenious woman can fashion for herself out of strong unbleached muslin or cotton drilling. Such bandage will be less expensive, and probably as useful as one bought at the shops.

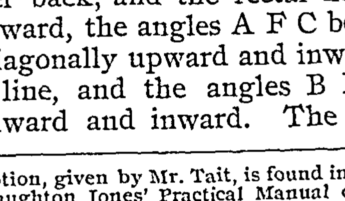
Case 3. Cystitis in Pregnancy.—This patient is 18 years old, is married, and ten months ago was delivered of a living child. In the third month of her pregnancy she began to suffer with frequent and painful micturition; she had to empty the bladder ten or twelve times daily, and several times each night. The disorder then beginning has continued until now. A specimen of the urine is shown you; it is cloudy, alkaline, and its specific gravity is 1016. Examination with the microscope shows a large quantity of epithelium and of pus.

Cystitis in pregnancy, while not frequent, certainly is not rare; just as there has been described a pregnancy nephritis, so there is a pregnancy cystitis, only the latter is much oftener seen than the former. In an interesting monograph upon cystitis in woman by Monod, published a few years since, he found twenty-six out of 124 pregnant women who suffered with vesical disorder early in pregnancy, and of the twenty-six, sixteen were primigravidæ. He attributes the cystitis of pregnancy chiefly to hyperæmia of the bladder caused by the close vascular connections between this organ and the uterus, the latter necessarily having its blood supply vastly increased. But in addition to this he considers sexual intercourse, frequently in the newly married excessive, as contributing to cystic inflammation. We do not now consider those grave cases of cystitis consequent upon retroversion or retroflexion of the pregnant uterus after it has become incarcerated, spontaneous evacuation of the bladder being impossible it becomes enormously distended, and sloughing with a fatal result may follow.

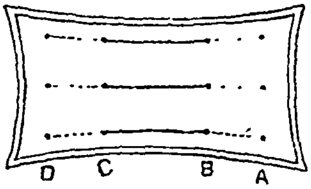
In regard to the treatment of cystitis in the female, I believe that you may very well dispense with medicines administered by the mouth for the purpose of action upon the vesical mucous membrane by being eliminated through the kidneys; but you will find the most important and prompt means of cure in washing out the bladder by means of suitable solutions or mixtures. This irrigation should be done with Hegar's funnel, to which a rubber tube and catheter are attached, and which is now shown you. The funnel, tube and catheter are filled with the preparation selected, and the funnel held so low that the fluid will not escape through the catheter previous to the introduction of the latter. Introduce the catheter, then raise the funnel, and the fluid passes into the bladder gently, without the least violence. After having had a sufficient quantity enter, lower the funnel, and the bladder is at once emptied. What shall be used for the injection? Braxton Hicks advocates slightly acidulated warm water, 1 or 2 drops of hydrochloric acid to the fluid oz. of water, for example. Recently I have been using a mixture of creolin and water, and the results have been very good. I first tried a 2 per cent. solution, but a mixture this strong will *in many patients cause great suffering; it seems* to me, therefore, better to begin with a mixture only half as strong, or even one still weaker. Remember when you irrigate the bladder to use the solution or mixture warm.

Case 4. Operation for Partial Rupture of the Perineum.—The next patient has a partial rupture of the perineum, and as you observe the tear which extends half-way back to the anus, you will see that there is also a condition which you frequently meet with if the injury is chronic, a prolapse of the recto-vaginal wall, that is a rectocele or proctocele. The operation which will be done is known as Tait's, after the distinguished Birmingham surgeon, Lawson Tait. I think the operation will be better understood and appreciated by giving Mr. Tait's words and using two of his diagrams in its description:

[1] "Having the folds of the buttocks pulled firmly apart, so that the cicatrix is put on the stretch, I enter the scissors at its extreme end on one side, and keeping strictly to its line, I run through to its other extremity. The incision is about ⅜ of an inch deep, and it forms two flaps, a rectal and a vaginal. From each end of the incision it is carried forward into the tissue of each labium for about 1 inch, and again backward for about ⅓ of an inch, making a wound like this—



The vaginal flap A is held upward, the patient being on her back, and the rectal flap B being turned downward, the angles A F C being pulled by forceps diagonally upward and inward toward the middle line, and the angles B D E being pulled downward and inward. The lines C E thus become straight, and the wound takes this form—



"By means of a stout-handled and well-curved needle the silkworm gut sutures are entered on one side about ⅛ of an inch within the margin of the wound, so as not to include the skin, at the dots A. They are buried deeply in the tissue as far as B, and then the needle is made to emerge so as to miss the angle of the wound. The needle again enters at the large dots C, and emerges at the dots B. By thus missing the upper or deep angle of the wound between B and C, the two great and divided masses of the old perineum, which lie in the parallelograms respectively bounded by the lines of large dots A—B and C—D, are respectively adapted. The rectal and vaginal flaps respectively point into the rectum and vagina, and like an old-fashioned flap valve prevent noxious material entering the wound. The resulting mass of perineum is amazingly large; union is almost inevitable, for I have failed only twice in many hundreds of cases, and then because there had been previous denuding operations. The resulting cicatrix is absolutely linear, and so resembles the natural *raphé*, that in three or four months after the operation it is quite impossible to determine, from the appearance of the parts, that the perineum has ever been injured, for there are no stitch-holes left to tell the story. The pain after the operation is trifling compared to the old method of quilled or shotted sutures. I leave the stitches in for three or four weeks, and take great care that the rectum and vagina are washed out twice daily."

I believe this method of operating is much to be preferred in most cases of perineoplasty. Its rapidity of performance, its simplicity, its firm foundation in just reason, and the satisfactory results in Mr. Tait's hands commend it, and I believe the day is not distant when the story of shotted wires and the quill sutures will be only of interest in antiquarian societies.

Case 5. Uterine Fibroids.—This patient is 45 years of age, married, and has given birth to two children; her labors were tedious and difficult, and each was ended by the forceps, and followed by pelvic inflammation requiring confinement to bed for several weeks. Six years ago the menopause occurred, and for two years she had excellent health, but for the last four years she has been subject to attacks of hæmorrhage from the womb, and while the loss of blood has been at no time excessive, yet its frequent recurrence has caused much weakness. Do not fail to observe the important fact that fibroids of the uterus, for the patient has several of these tumors, do not always shrink, atrophy, and cease to give trouble when the menopause is established. So usually is such the favorable result that one of the accepted methods of treatment of a patient suffering from hœmorrhage consequent upon such growths, is to anticipate nature's menopause by making an artificial one, removing the uterine appendages so that menstruation will cease. But what possible good would follow removal of the tubes and ovaries in this case?

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[1] This description, given by Mr. Tait, is found in the third edition of H. Macnaughton Jones' Practical Manual of Diseases of Women, London, 1888 The author of the Manual, by the way, strongly endorses the method.

These tumors begin in the uterine wall, oftener in the posterior than in the anterior, usually in the body, very rarely in the cervix, and according to the predominance of muscular tissue in their structure are known as myomata, of fibrous tissue as myo-fibromata or fibroids. These tumors are rarely solitary, but usually three or four or a larger number will be found. In the case of this patient I can by bimanual examination recognize four which have grown toward the peritoneal cavity, while probably there is only one which has become submucous, and is the source of the bleeding from which she suffers. Various remedies have been given this woman internally with little or no benefit. What those remedies are I do not know, but it would be well to try the fluid extract of hydrastis Canadensis, twenty drops four or five times a day, and she is so wretchedly anæmic I would like her to have twenty drops of the muriated tincture of iron twice or thrice daily. But something must be done immediately to arrest the hæmorrhage. Let me try the following treatment, a treatment which you will sometimes find quite useful: First dilate the cervix, then curette that portion of the mucous membrane at which the tumor is projecting, this curetting being followed by the application of Churchill's tincture of iodine, or of a solution of one of the iron salts mixed with glycerine.

Case 6. Primary Cancer of the Vagina.—The patient, who is forty-six years old, gives the following history: She was married when twenty-five years old, and has given birth to eight children, has had good health until about eight months ago when a profuse leucorrhœa was observed, followed in two months by occasional hæmorrhages from the vagina, and more or less local distresses; she has severe pain in the groins, extending to the sacrum, and almost constant "back ache"; she has been losing flesh, and her strength has been failing. Upon examination there is found occupying at least two-thirds of ths posterior wall of the vagina a vascular growth easily broken down, and presenting irregular prominences and fissures. The cervix and the vulva are quite free from disease, and therefore the affection has not extended from either to the vagina, a very common, almost constant occurrence alike in cancer of the external genitals or of the vaginal portion. Hence the disease is primarily vaginal, involving only the vagino-rectal wall. A piece of the growth was removed for examination with the microscope, and Dr. Coplin reports that it is undoubtedly cancerous. Primary cancer of the vagina is a very rare affection. Breisky, in a paper upon the subject written a few years ago, refers to only twenty-four cases of such disease having been reported up to that time. But there is a large number of unreported cases, so that the disease is less rare than Breisky's statement would indicate; Dr. Hearn, for example, who is present, tells me that he met with a case a few years since. The posterior wall of the vagina is more frequently affected than the anterior. The majority of the patients were between thirty and forty years of age, though the disease has occured at sixteen and at sixty.

From the nature of the tissues involved vaginal cancer has a rapid course. Only when the disease is discovered almost in its very commencement is there any hope from treatment; then complete extirpation being done, a temporary cure is accomplished. But in this patient it is utterly impossible to remove the entire diseased mass. Therefore only palliative treatment will be attempted—the patient's comfort will be increased somewhat, and possibly death will be delayed. Let as much of the disease be removed as possible, and this removal will be made by the galvano-cautery knife, with Simon's spoon, and by a preparation of bromine. The first is an excellent means theoretically, but often failing in practice; the operation is comparatively bloodless, but before you have completed it the electric current ceases. (This happened in the case, and Simon's spoon was substituted.) The blood soon obscures the field of operation when the spoon is being used, and to arrest the flow it is well to apply to the wound a mixture composed of one part of bromine, two of iodine, three of carbolic acid and four of alcohol; applying this mixture by means of cotton, the bleeding is arrested, and the use of the spoon is resumed. After removing as much of the diseased growth as possible, a pledget of cotton dipped in the solution mentioned is left upon the surface, and this surrounded and covered by pieces of cotton dipped in a bicarbonate of soda solution so that the caustic may not extend its action to adjacent healthy tissue. The tampon thus occupying the vagina will be removed at the end of two or three days, and then an antiseptic injection be used twice a day. (There was an improvement for a few weeks, but it was only temporary; the patient left the hospital in search of her truant husband, and very soon returned to say that she was suffering as much as, if not more than before the operation, and her general health showed still greater deterioration.)

MEDICAL PROGRESS.

PREVENTION OF TUBERCULOSIS.—At a recent meeting of the German Public Sanitation Association PROF. HELLER introduced the subject of the prevention of tuberculosis. He believes that tuberculosis is to be regarded as the most important of all diseases in that it furnishes the largest mortality of all causes of death. It is also the most important from the standpoint of social science, because its victims die after a long illness, during which their earning capacity is lessened or destroyed, while during life they are a constant menace to their fellows. From microscopical preparations Heller estimates the number of tubercle bacilli in the sputum of a tubercular subject at 1,000,000 per cubic centimetre; in a single expectoration, on an average, 3,000,000 bacilli are discharged. The control of tuberculosis should be urged most vigorously by State and community; such warfare promises a very important diminution, if not complete extermination of the disease. Koch's bacillus is the cause of the disease; its appearance outside of the animal organism has not been proved, although it is able to preserve its infective properties for a long time. The bacillus of tuberculosis may be acquired (*a*) by transmission, though this is of minor significance; tuberculosis has never been observed in the new-born; the earliest age at which it has been observed is nine weeks after birth, the interval which is necessary for the outbreak of the disease after infection has taken place; (*b*) by direct or indirect conveyance from other tubercular human beings; the chief source of infection is the sputum; (*c*) by direct or indirect conveyance from tubercular animals, especially by their milk and by such parts as serve for food.

As measures to be taken against the spread of tuberculosis mention may be made of the disinfection of the sputum in schools, regular cleaning with water and frequent disinfection of the school rooms; the erection of disinfecting stations throughout the community, with the instruction of people regarding the technique of disinfection; repeated disinfection of dwellings and the utensils of tubercular invalids; the enforced disinfection of dwellings and effects of those who have died from tuberculosis; attention to the health of wet-nurses, midwives and attendants upon the sick; the supervision of those who are engaged in the preparation and sale of food stuffs, with the exclusion from such employments of coughers; the careful hygiene of hospitals, prisons, orphan asylums, and all similar institutions; the instruction of the populace; the strict enforcement of meat inspection; attention to breeding of tubercular animals; the inspection by veterinaries of the stabling where tubercular animals are found; the destruction of all animals found to be tubercular, with at least partial compensation to owners; the inspection of milk depots.

After the discussion a resolution was adopted by the Association, which recommended the earnest attention of the State and municipal authorities to the above rules of prevention.—*Wiener Med. Woch.*

TREATMENT OF LOCOMOTOR ATAXIA.—BENEDIKT reports a case of locomotor ataxia which, when admitted to his services, presented a marked degree of amblyopia and amaurosis, together with such a degree of ataxia that the patient could not stand, even with the assistance of two persons. After various attempts with hydropathic and electrical treatment, Benedikt stretched both sciatic nerves and the patient was soon able to walk alone, with the assistance of a cane. This case confirms a law formulated by Benedikt twenty-five years ago, to the effect that cases of tabes with prodromic atrophy of the optic nerve have a favorable prognosis as regards the ataxia. Bendikt also reports a case of locomotor ataxia treated by suspension. The patient has submitted to forty suspensions of two minutes each. Pain has almost disappeared, and the ataxia is greatly improved, the patient being able to stand erect even with his eyes closed. In this case, as in all cases of syphilitic origin, the ataxia is atypical. Benedikt maintains that the majority of patients afflicted with locomotor ataxia and progressive general paralysis have never been the subjects of syphilis.—Vienna correspondence *La Sem. Méd.*

TREATMENT OF SPASTIC INFANTILE HEMIPLEGIA.—BENEDIKT reports two cases of spastic infantile hemiplegia. Cases of hemiplegia which affect the type of apoplexy or cerebritis give a favorable prognosis when not complicated with symptoms of motor excitement. In cases where such symptoms do exist treatment of one extremity is capable of producing a favorable effect upon the functional activity of the entire organism. In spastic infantile hemiplegia which gives a grave prognosis, the patients are not able to use the affected extremity; furthermore, choreic movements of this extremity prevent functional activity of the other. In the two cases above referred to by Benedikt nerve stretching was adopted, in the first the radial and cubital were stretched, in the second the cubital and median. The results of this operation were complete cessation of the choreic movements. In the first case the improvement has lasted five and one-half years.—Vienna correspondence *La Semaine Méd.*

QUINSY.—In the early stages of quinsy, chloral hydrate is nearly a specific, three or four grains to the ounce of glycerine being used as a gargle. It is locally antiseptic, astringent and sedative.—*Medical Record.*

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SATURDAY, JANUARY 4, 1890.

THE SUSPENSION TREATMENT.

A little over a year ago CHARCOT made his first trial of suspension in the treatment of locomotor ataxia, the idea being given him by DR. RAYMOND, of the Paris Faculty, who brought it back from a trip into Russia. In January, 1889, he published his observations (*Prog. Méd.*), and today all over the world this proceeding is being employed on thousands of cases of the most widely varying nature, and often in the most hap-hazard and even reckless manner. MOTCHOUKOWSKY, Physician to the Odessa Hospital, who accidentally hit upon this plan of treatment through observing amelioration of subjective symptoms in a tabetic suspended with the Sayre apparatus for the application of orthopædic appliances, published in 1883 (*Vratsch*) seventeen cases so treated with favorable results in twelve, and made moderate claims for the value of the method. It became generally known, however, only a few months ago when the endorsement of Charcot gave it at once wide celebrity and secured it an extensive trial. This is one of the incidents which well demonstrate the present international character of medical science and at the same time the deserved potency of a master mind.

The results as reported are often conflicting and of necessity, in this short period of probation, usually premature and unreliable. The category embraces advantages gained and accidents incurred, patients restored and patients made worse, while cures and even fatalities are not lacking. On the whole commendation of the method prevails.

An empirical proceeding at the start, its *modus operandi* is as yet unknown, its position in the scale of usefulness undetermined. Some points have been made plain, however, not the least important of which is a degree of danger associated with its employment. Among important results directly attributable to its use are brachial palsies, temporary spastic contractures, fracture of the maxilla, alarming syncope, cerebral hæmorrhage and sudden death. Those employing suspension for orthopædic purposes often encounter patients who cannot tolerate the traction and position. These things point with no uncertain index to the necessity for precaution and care in selecting cases and applying this treatment. BLOCQ, a pupil of Charcot, points out a number of contra-indications to its use (*Bull. Médical*, January, 1889). Danger, according to this observer, is present in extreme weakness from any cause, and particularly when a considerable degree of anæmia is associated. Patients presenting œdema or obesity, those suffering with impaired respiratory or circulatory organs, as in emphysema, atheroma, enlarged heart, valvular mischief, previous apoplexy, etc., are not fit subjects for this treatment and liable to serious consequences from its employment. To these may be added those presenting kidney disease or active spondylitis. As yet it is not determined what conditions of the nervous system *per se* exclude this manœuvre.

It was determined by Motchoukowsky and confirmed by others that suspension of the dead body causes a lengthening of the vertebral axis, including the head, of from 3 to 5 centimetres. As the spinal cord floats somewhat freely in its canal it is doubtful that any appreciable tension is brought to bear upon it, and probable that such as may be exercised is expended upon the spinal nerves in the intervertebral foramina. Indeed, stretching of sciatic nerves for the benefit of ataxia, both by the passive flexion of the thigh on the body and by cutting operations, dates back to 1872 (Nussbaum), and improvement sometimes follows the proceeding. It may therefore be supposed that the nerve stretching brought about by suspension is an important factor, even should it not act directly upon the diseased elements of the cord.

Some suggestive experiments have just been reported before the Italian Medical Congress by DR. LOMBROSO (*Sem. Médicale*, October). He suspended a number of rabbits in two series. In one a weight was attached to the body of the rabbit sufficient to make up the proportion of body to head weight as found in man, and these all succumbed after an average of ten suspensions. In each instance small meningeal hæmorrhages were found, particularly in the coverings of the cord, and the gray matter presented minute extravasations and engorgements most marked about the central canal of the spinal cervical segments. The rabbits suspended without the extra weight were not seriously affected and when examined presented no similar lesions. It is difficult to apply to man deductions made from such experiments on small animals, especially when natural conditions of body weight are changed, but we may here possibly see a reason why obese and œdematous patients stand the operation so badly. There can be no doubt that suspension increases arterial tension, as is shown by the engorged face, the rapid hard pulse, the quickened respiration, the frequent tendency to vertigo and the sphygmographic trace. It is probable that the temporary artificial hyperæmia of the nervous centres is an important element in producing the sometimes almost instantaneous improvement of subjective symptoms. It has been urged that suggestion and mental impression might account for this, but the improvement is not confined to the subjective features alone. The eye signs, the incoördination, the ability to stand and walk in a straight line with closed eyes, the cutaneous sensibility, the sexual power, the body weight, and even the patellar reflex, are modified for the better in certain cases.

In carrying out this procedure a number of practical points and safeguards are suggested by various reporters. The patient's sensations and condition should be the criterion for its continuance. Some tolerate three or four minutes of suspension from the beginning, while others can endure but a few seconds. The best results seem to be obtained by suspensions of not longer than five minutes repeated not oftener than on alternate days. At first, if not always, it is better that a sitting position be allowed the patient. In this way the treatment is less terrifying, gives better control of the subject, can be instantly discontinued, and possibly the flexion of the thighs serves to fix the lower end of the cord, while the diminished weight is an item on the side of safety. By using a spring scale the exact amount of traction can be observed and accurately modified and recorded. With this addition to the apparatus the treatment can be intelligently and tentatively undertaken, and the amount of force employed gradually and equably increased, but more than that equal to a moderate body weight for each patient is scarcely desirable or advisable. When suspension is partly made by the axillary bands, owing to the indirect attachment of the upper extremities through the shoulder girdle to the vertebral axis, the weight so supported is practically deducted from the force applied to the extension of the spinal column. In the sitting position they may better be omitted, simplifying and making more exact the application of the extending force and removing a source of danger to the axillary contents. The bands should be so arranged that any twisting or over-extension of the head is not produced. If the teeth do not properly articulate or are in part wanting an interdental splint may be fashioned, or sometimes a roll of cotton wool will answer the purpose. The predisposition to fracture in tabes makes this precaution an important one.

The inefficacy of all former treatment of organic disease of the cord, the promises held out by suspension and the indorsement it has received in high places, make it the more desirable that it should have a thorough trial, be deprived as far as possible of danger, and employed with unusual circumspection and precaution.

FUNDAMENTAL MEDICAL STUDIES.

The printed account of the opening exercises at the Clark University of Worcester, Mass., on October 2, 1889, has just been received. The notable feature of the occasion was the address of the President, DR. G. STANLEY HALL, an address which is a most carefully composed plea for the profound German type of university education. Dr. Hall is an able exponent of the modern idea of laboratory research and of an elaborate preparation and foundation for medical study. That which he would require in the way of preliminary training would close the doors of the medical profession against four-fifths of our would-be practitioners, and would shut half our medical colleges for lack of patronage. The thoroughness of the new idea is illustrated in the following extracts:

> Biology explores the laws of life upon which not only these studies but human health, welfare and modern conceptions of man and his place in nature so fundamentally rest. The law of the specific energy of nerves, *e. g.* which Helmholtz says equals in importance the Newtonian law of gravity, and more than anything else made physiology the science which has had so large a share in raising the medical profession in Germany to a position in the intellectual world such as it never had before, doing for it in some degree what chemistry has done for dyeing, and even instruments like the ophthalmoscope, which almost created a department of medical practice, or the spectroscope, now indispensable in the Bessemer process, sugar refining, in wine and color-dye tests, the detection of photographic sensibilators, in the custom house and in two important forms of medical diagnosis --all these, to cut short a long list of both epoch-making laws and important instruments, are the direct products of whole-souled devotion to unremunerative scientific research.
>
> It is hard for medical students to realize that they can not understand hygiene, forensic medicine, pharmacology and toxicology without a rigorous drill in chemistry; that they must know physics to understand the diagnostic and therapeutic use of electricity, ophthalmology, otology, the mechanism of the bones, muscles, circulation, etc.; that zoology is needed to teach sound philosophic thought, generic facts about the laws of life, health, reproduction and disease. These, and sometimes also sciences like mineralogy, anthropology and psychology, are required in Europe, with much more rigor than is common with us, of every medical student. Thus doctors, like technologists, can not know too much pure science. An eminent medical practitioner in Europe compares young physicians who slight the basal sciences of their profession and pass on to the clinical, therapeutical and practical part, to young men who grow prematurely old and sterile . . . . The young man who has had the invaluable training of abandoning himself to a long experimental research upon some very special but happily chosen point was typically illustrated in a man I knew. With the dignity and sense of finality of the American senior year quick within him, his first teacher in Germany told him to study experimentally one of the score of muscles of a frog's leg. He feared loss and limitation in trying to focus all his energies upon so small and insignificant an object. The mild dissipation of too general culture, the love of freedom and frequent change, aided by a taste for breezy philosophic romancing, almost diverted him from the frog's leg; but as he progressed he found that he must know in a more minute and practical way than before—in a way that made previous knowledge seem unreal—certain definite points in electricity, chemistry, mechanics, physiology, etc., and bring them to bear in fruitful relation to each other. As the experiments proceeded through the winter, the history of previous views upon the subject was studied and understood as never before, and broader biological relations gradually seen. The summer and yet another year were passed upon this tiny muscle, for he had seen that its laws and structure are fundamentally the same in frogs and men; that just such contractile tissue has done all the work man has accomplished in the world; that muscles are the only organ of the will. Thus, as the work went on, many of the mysteries of the universe seemed to center in his theme. . . . . . .

President Hall rather impatiently remarks that while the material progress of this country has been remarkable, the higher education, including that in medicine, has been falling behind.

> It has been estimated that but 5 per cent. of the practicing physicians of this country have had a liberal education, and that 60 per cent. of our medical schools require practically no preliminary training whatever for admission, while European laws require a university training for every doctor before he can practice. Again, we apply science with great skill, but create or advance it very little indeed. Should the supply of European science, which now so promptly finds its way here and fertilizes and stimulates to more or less hopeful reaction our best scholars, and upon which we live as upon charity, be cut off by some great war or otherwise, the unbalanced and shortsighted utilitarian tendencies now too prevalent here would tend toward the same stagnation and routine which similar tendencies unchecked long ago wrought out in China.

We have no right to expect the *immediate* carrying out of such a radical change in our system of education as is implied in these teachings and illustrations of Dr. Hall, but nobody will regret to see him hold the standard high. We need more young men whose intellect shall be equal to original research, and whose industry and love for work shall lead them to place themselves under such guidance as that of Dr. Hall and the Clark University.

THE MEETING AT NASHVILLE.

The officers of the various Sections are already moving in the matter of preliminary work incident to the next Annual Meeting at Nashville. This is well; and if the effort this year shall bring to Nashville an array of papers such as was submitted at Newport, the meeting will prove another notable success. Only those who are of the junketing order would have accused the members at Newport of such proclivities. The submission of one hundred and seventy-three papers in the various Sections, and the extra sessions held for their proper presentation and discussion, renders it evident that banqueting was not even incidental from first to last. If such criticism was offered in sober earnestness, we submit that a more intimate acquaintance with the work done would have effectually dispelled the delusion. Attractive as were the entertainments proffered at Newport, very few of the members were diverted from the real purpose of the meeting, and perhaps never in the history of the Association was there the same amount of work accomplished, or work of greater value, than was there presented.

The number of able writers coming to commanding positions in this country is such that with due diligence the officers should have no difficulty in securing valuable papers and in such numbers as to ably represent the medical profession in every department; and we submit that the interests of the representative medical men in America will be best served by affiliation with those who there meet, and who so ably represent the various sections of this broad land. With a judicious selection of writers, and with the proper preparation of papers, the next meeting will be one of profit and in every way enjoyable.

The beautiful city of Nashville is of itself an attraction, and the culture and hospitality of its people have long been proverbial. It is the pivotal centre of the North and South, and it welcomes the East and West. The location and the fraternal feeling of the profession in all parts of the country will alike conspire to render the next Annual Meeting a notable event.

Let the entire profession of America have an able representation, and let the members come together not only for mutual acquaintance and fellowship, but, most of all, for earnest professional work. Let the meeting at Nashville represent the best elements and the best work possible. So shall it be a signal success worthy of itself and of its place of meeting.

EDITORIAL NOTES.

HOME.

CORNELL UNIVERSITY, NEW YORK.—The authorities at Cornell University have in consideration the ways and means for the establishment of a department of medicine. They wish to found a school of the highest requirements and with an endowment proportionally large. They have gone so far as to select a name for it, as follows: "The College of Medicine of the Cornell University," and they would by preference have its location away from Ithaca, either at New York City or Brooklyn. If a handsome endowment can be secured, the rest will follow readily.

A LADIES' HEALTH ASSOCIATION.—A sanitary question, which has been before the Board of Health of New York City for some time, has been that of the handling of offensive stable refuse. The ladies belonging to the Health Protective Association have attacked this deeply rooted nuisance to crowded localities, year after year, until finally they have won their victory. It has been ordained that after the 15th of May, 1890, the contents of the manure-pits of the thousands of stables in that city, must be removed either in bales or in tight barrels, tight, dry, and tightly covered. These ladies go wherever duty calls them and their courage and pertinacity have won them and their tenement-house clients many a victory.

THE INFLUENZA EPIDEMIC OF *1889*.—A few cases of catarrhal disease have occurred in New York City which seems to bear a close resemblance to the influenza of epidemic origin. They will be kept under observation by the physicians of the Board of Health and an accurate record made of them. A member of that Board is reported to have said that their work of observation was about all that could be done in a sanitary way, the disease being "mainly due to atmospheric influence and we cannot quarantine the four winds of heaven." The contagious element in influenza has been asserted, but must be extremely insusceptible of demonstration in the presence of an indisputable atmospheric cause. Although the present epidemic has been called the Russian catarrh, it is known to have been in the Balkan countries before it reached Russia. It spread over Russia at a rate of speed estimated at 200 miles per diem average, and forty per cent. of the population in northern Russia has been sneezing. It has affected the adult population in a marked degree, so that in Germany it has been remarked that the school-children escaped while their teachers were the victims. As in former incursions in Europe, elderly people have been particularly liable to the disease. The domesticated animals, as horses, dogs and cats, have been affected by a catarrhal disease as well as humanity, but apparently to a less extent than on some former occasions. Just as in former years, heavy fogs have, at some places, been a concomitant of the epidemic of 1889. In some accounts of the Parisian epidemic of 1733, it is stated that there were dense, black fogs which commonly set in late in the afternoon so that people went about with lanterns and candles in their hands, "and yet had much ado to find their way and their own doors." One practical point from the present epidemic that has come to us seems to be that it is just as well to get the influenza early, if it cannot be avoided, because those who have it late are said to have it with a much greater degree of severity than the earlier victims.

GOOD SAMARITAN HOSPITAL, CINCINNATI.—An addition is being built to this hospital by the owners, the Sisters of Charity, by which the capacity of the institution will be about doubled. The Good Samaritan has, through many years of patronage by the leading physicians and surgeons of the city, become almost entirely devoted to the care of private patients.

PRESBYTERIAN HOSPITAL BURNED.—On the night of December 19th, the Presbyterian Hospital of New York, had a narrow escape from total destruction by fire. Eighty patients were in jeopardy for a time, but all were removed without the loss of a life; the only persons injured, in fact, were a few fireman. Two club houses and the Seventh Regiment Armory are near at hand and were almost depopulated by the members running to the rescue, and gentlemen in evening costume and regimentals could be seen carrying stretchers with sick and wounded on them and acting the part of a life-saving corps to the best of their extemporized ability. The loss is estimated at $100,000.

FOREIGN.

THE CHOLERA IN MESOPOTAMIA.—The epidemic of cholera which has raged for several months in Mesopotamia has undergone a very marked decrease, and it is to be hoped that the sanitary condition of this province will shortly be as good as usual. It is said regarding the origin of this epidemic that the importation of the disease was due to the transportation of bodies from Bombay to the sacred cities of Nadjef and Kerbela. It is not impossible, although it has not been definitely proved that the cholera was thus introduced into Mesopotamia, but it would be an error to affirm that the transportation of bodies from Bombay by English steamers is anything new. This goes on every year and the Ottoman authorities take the necessary precautions to prevent all danger.

CHOLERA.—The *Journal d'Hygiene* of December 5, 1889, says that cholera has reached Mosul; thus the whole plain watered by the Tigris and Euphrates is invaded by the epidemic, and the epidemic will continue its march towards the south and towards the seaboard of Syria, if the winter season and abundant snows do not, by interrupting communications, play the part which is so unsuccessfully attempted by the inadequate sanitary and military cordons. Mosul is a city in direct communication with Aleppo and Damascus, but separated by the desert. It is probable that the cholera, passing through Erzeroum and Trebizond, may make its appearance on the seaboard of the Black Sea, and thence menace Europe. Moreover, information as to cholera in Persia, transmitted by two telegrams from Kermanshah, and Teheran, announce that the epidemic continues to rage at Hamadan. From Hamadan to Teheran, from Teheran to Reshd, on the Caspian Sea, communications are easy. Further, if, as it is stated, cholera is making ravages in Bokhara, from that side also the epidemic may menace Central Europe by way of Batoum.

A NATIONAL LEPROSY FUND.—It is announced that His Royal Highness the Prince of Wales intends to take the chair at a subscription dinner at the Hôtel Métropole on the 13th inst., for the purpose of appealing for public aid in the promotion of a National Leprosy Fund. It is proposed that the interest arising from such fund should be devoted to the medical treatment and care of indigent lepers in the British Empire, and that a sum of money be set apart and placed under the control of trustees for the endowment of two studentships, one student to make the United Kingdom and the remainder of Europe his field of investigation, and the other to go abroad and study the disease in India, China, the colonies, and elsewhere.

A SOCIETY of Naturalists and Physicians has been established at Tomsk, Western Siberia.

SIR WILLIAM STOKES has been appointed Examiner in Surgery in the University of Oxford.

TOPICS OF THE WEEK.

THE RUSSIAN INFLUENZA.

After the discovery, in the last weeks of October, of the first cases of the epidemic which is now raging in St. Petersburg, the disease, under the influence of an unusually warm, moist, foggy atmosphere, with prevailing west winds, spread with wonderful rapidity throughout the city. The rapid increase of sickness was soon evidenced by the great numbers of patients transported by the ambulances to the hospitals, which were soon filled to overflowing. The number of patients attacked during the three weeks which have elapsed since the beginning of the epidemic cannot be estimated even approximately, but we believe from all that we can learn that it amounts to from one-third to one-half of the entire population of the city. The disease spread with equal intensity among all classes of the populace, from highest to lowest, and apparently without the least regard to the hygienic surroundings of the victims and without a suspicion of any special predisposition toward the disease, which, if it exists at all, must be of a most general character. The universal and equal spread is manifested especially in the disturbance of all social conditions. There are few families in which one or more members have not been seized. Instruction in the schools has come to a standstill because in many of them from 25 to 50 per cent. of pupils and teachers are absent. In some instances factories have been closed, while in others work goes on with difficulty because half the employés are sick. The military hospitals are overcrowded, and many of the sick are obliged to remain in the barracks; regular drill has been interrupted. Physicians and apothecaries have displayed an unparalleled activity, and have themselves in great measure become victims to the epidemic; in short the genius epidemicus everywhere prevails. Neither sex nor age is spared, although some physicians think they have discovered a disproportionately large number of cases in the male sex, with a lessened predisposition to the disease on the part of advanced age. That children are no more exempt than adults is shown in the fact that the ambulances of our great children's hospitals have to care for double the usual number of patients, the excess being due to the epidemic.

The occurrence of this epidemic is perhaps associated with the long continued duration of low water. The disease spreads apparently in a miasmatic manner, the miasm appearing to be of a rapidly spreading and transitory character. It is questionable whether it spreads earlier and more rapidly to low-lying quarters, the facts in this connection being of a contradictory character.

It is impossible, as yet, to say whether the disease spreads by contagion, because it has been distributed everywhere in an equable manner. On the one hand numerous cases have been reported where only one member of a family has suffered, while, on the other hand, cases are reported in which one member after another was stricken down.

The period of incubation, as definitely determined in the case of new arrivals to the city, is two days. The prodromal stage is short, often lasting only a few hours. It is recognized by weariness, headache, chills, etc., as in other infectious diseases. The complex of symptoms is various, and the cases of the disease may be divided into three groups. Common to all, however, is the appearance of general nervous symptoms, such as severe prostration and weakness, with pain in the limbs, headache and sometimes dizziness, and a variety of nervous sensations (such as hyperæsthesia), which are not always in correspondence with the fever, which is transitory and often of moderate degree. The fever generally comes on suddenly and often reaches a height of 40° or 40.5° on the first day, to fall as suddenly again; or it may remain high for a couple of days and then disappear quickly. The fever lasts from one to three days, rarely from five to six days. An enlargement of the spleen is observed in most cases.

The three groups of symptoms above mentioned are characterized as follows:

1. The Purely Nervous Form.—The general symptoms arising from the nervous system are very conspicuous. Sometimes the pains are of a neuralgic character and simulate a beginning pleuritis, etc. The respiratory and intestinal mucous membrane is entirely normal. This form is especially frequent and has often led to a mistaken diagnosis of insipient typhoid fever.

2. *The Form Characterized by Catarrhal Affection of the Respiratory Mucous Membrane.*—Bronchial catarrh, snuffles and conjunctivitis develop with the fever (or sometimes only become conspicuous after its abatement) and last generally four days after the disappearance of the fever.

3. *The Gastric Form, with Catarrhal Affection of the Digestive Tract.*—This sets in with frequent vomiting which may last from one to two days.

Special symptoms have been observed as follows: Herpes of the lips and nose occurs as a common symptom; herpes of the eyelids seldom occurs; erythema, roseola; urticaria, etc. As complications, though upon the whole of rare occurrence, these have been reported: meningeal irritation, catarrhal pneumonia; this last has been the cause of death in the few cases which have had a fatal termination.

Aside from the well-marked cases a great number of mild cases have of course been observed—cases in which only a portion of the above decided symptoms have been manifested, and these only in moderate degree and soon giving way to complete euphoria.

Convalescence in the typical cases occurs in varying manner, depending largely upon the severity of the attack and the character of the treatment adopted. Many patients feel quite prepared to resume their ordinary duties upon the day after the cessation of the influenza; in others the catarrh and nervous symptoms persist for days. Relapses also occur in some cases; the patient may be free from fever and feel relatively well when, on the sixth or seventh day, the fever and chill return and the catarrhal symptoms again appear.

In the therapeusis of this disease the principal rôle is played by quinine and antifebrin (0.5 grm. two or three times a day); these have the advantage of cheapness and are therefore well suited to the poor. The other remedies chiefly relied upon are antipyrin, salicylate of sodium and similar preparations, and diaphoretics. The results effected by all these remedies have been vaunted. The laity has by this time become sufficiently acquainted with the therapeusis of the disease to undertake in some measure its own treatment, the result being that the retailing of quinine has reached enormous proportions (*e. g.*, 1 lb. in two days by the average apothecary), and the supply of dried raspberries is almost exhausted.

This brief sketch of the present epidemic, based upon communications from our colleagues, especially those received in the General Society of St. Petersburg Physicians, will require to be corrected and completed by further experience. Until then we shall add nothing to it. Regarding bacteriological work during the epidemic with a view to discovering the bacillus of influenza nothing is yet known, and we can only hope that the great burden at present devolving upon our physicians will not render such work impossible.

Reports are now coming in of the spread of the disease to other Russian cities—Moscow, Wilna and Kasan.—*St. Petersburger Med. Wochenschrift*, November 30, 1889.

DEATH OF PROFESSOR VON VOLKMANN, OF HALLE.

On Thursday, November 28th, RICHARD VON VOLKMANN, the illustrious surgeon of Halle, died at Jena, in the "clinicum" of his friend Binswanger. He held a leading place among the surgeons not only of Germany, but of Europe. He had witnessed and taken part in the development of modern surgery from its beginning forty years ago to its present flourishing condition. During his student days Simpson introduced chloroform into medical practice, and about the same time Langenbeck and Stromeyer laid the foundation of modern military surgery in the war of Schleswig-Holstein. The routine practice of amputation in nearly every case of fracture of one of the extremities was then first abolished by the introduction of excision of the joints. Langenbeck gave directions to the German surgeons to preserve as much as possible of the wounded limb, even if the time of cure was very protracted.

Volkmann followed in the footsteps of these great masters through his whole life. His researches on the treatment of joint disease and his method of permanent extension form the basis of his reputation as a surgeon. He was one of the first to accept the doctrines of Lister, and to his enthusiastic advocacy it was largely due that the theory and practice of surgical antisepsis were so quickly and so universally adopted in Germany. Volkmann not only accepted Lister's teaching, but he simplified the details of the method in several important particulars.

Though Volkmann's favorite province of professional activity was the surgery of bones and joints, his scientific interest was by no means confined thereto. He investigated and wrote on erysipelas and lupus and on malignant tumors, especially cancer. He was working at the latter subject in the last few weeks of his life. His vast experience made his opinion valued by all practical surgeons, and the part he took every year in the debates at the Surgical Congress at Berlin always contributed greatly to the success of these meetings.

Volkmann was exceedingly skilful and elegant as an operator; he was fertile in resource and a great inventor of new procedures. His pupils idolized him, for he was not only a teacher who joined the greatest elegance with the highest clearness of diction, but he was up till his death the students' sincere and warm-hearted friend.

In spite of his high rank in society and in the hierarchy of science, he remained a *Bursch* to the last. In Halle many amusing stories are current about Volkmann's good humor. In the midst of his overwhelming professional work he found time to gain the laurel wreath of a poet. His *Träumereien an französischen Kaminen*—tales which he sent home to his children during his sojourn in France in 1870 and 1871—were published under the pseudonym "Richard Leander," and had a great success. His *Lieder aus dem Saalethal* added to his literary reputation, and many of his fairy tales, told in the first instance to his own little ones, found their way to the hearts of German children.

In Volkmann Halle has lost its chief medical attraction, the German army one of its foremost surgeons, and the art of surgery one of its most brilliant exponents.—*British Medical Journal.*

PHYSICAL TRAINING IN PUBLIC SCHOOLS.

The Fourth Annual Report of the Board of Health of Maine contains a useful paper by DR. F. N. WHITTIER, Director of the Sargent Gymnasium at Bowdoin College, on "Light Gymnastics for Schools." Dr. Whittier repeats the arguments (no less weighty because they have been given before, and no less important because they are habitually disregarded by school boards), in favor of systematic physical training in the public schools. For a striking confirmation of the proposition that such training improves the mental power of its subject he cites an experiment recently carried on by Dr. H. D. Wey at the New York State Reformatory at Elmira. Wishing to give the theory a fair test, Dr. Wey selected twelve of the dullest boys in the school and gave them a thorough course in physical training, the boys themselves having no knowledge of the object of the experiment.

Their average rank in their studies for the five months immediately preceding the experiment was about 45 per cent., while during the five months' course in physical training their average was 74 per cent., and what is still better, they maintained their advanced standard during the six months following the discontinuance of the course; thus showing that the effect was permanent. In his report Dr. Wey says: "With physical culture and improvement there came a mental awakening, a cerebral activity never before manifested in their prison life. Their faces parted with the dull and stolid look they had in the beginning, assuming a more intelligent expression, while the eye gained a brightness and clearness that before was conspicuous by its absence."—*Boston Med. and Surg. Journal.*

PRACTICAL NOTES.

THE INFLUENZA.

In the *Medical News* of Dec. 28, Prof. Roberts Bartholow, of Jefferson Medical College, contributes an able and interesting article upon the history, pathology and treatment of the epidemic which at the present hour is commanding the attention of the laity as well as the profession in both hemispheres. From the paper referred to we make the following extract:

"Influenza comes suddenly; goes as quickly. The least robust, at any age, and women seem to be the first victims. It is here a question of bodily condition, not of the sex. The large numbers simultaneously attacked attract general attention, and thus the most impressionable are seized, the onset being facilitated by any depressing emotion, like fear or illness. There is no rigor, properly to be thus designated, but rather a series of light chills and a feeling of heat therewith. Sometimes malaise of a general kind is experienced, but, like the attack itself, is short in duration—lasting but a few hours. With the first access of the nasal and faucal irritation comes the chilliness, which is followed by some feverishness, with more pronounced malaise, and, in general, the headache, weakness, and soreness of the members, especially of the larger joints. With the progress of the case in some epidemics there is considerable general weakness, even marked depression of the vital powers. The pulse becomes small and weak, the mind gloomy, and restlessness ensues. When a fatal termination is to occur, as a rule, an extension downward into the trachea and bronchi takes place. Although catarrhal and croupous pneumonia are said to be "complications," they should be regarded as occasional conditions, and when present are, properly speaking, constituent parts of the malady. The chief importance of croupous and catarrhal pneumonia is that the development of these, out of an existing catarrh of the bronchi, is frequently a cause of death. The rapidity with which the disease supervenes—its preliminary development being hours, and its whole career but a matter of three or four days—is remarkable. Relapses are common, usually each succeeding attack being milder, but not a few pass by easy transition into chronic bronchitis, emphysema, asthma, etc. Obviously a catarrhal process, extensive and severe, may contribute immensely to chronic disease of the middle ear, Eustachian tube, nose and throat, and thus permanently damage the parts. The best manner of securing immunity is by the inhalation of sulphurous acid gas daily when the approach of the epidemic renders it necessary, and by taking five grains of salicylate of cinchonidine three times a day, and by so living as to avoid taking cold. When the attack has begun, it seems to me desirable to give one or two grains of calomel at night, inhale some sulphurous acid gas, and have the patient sit in a room where steam containing eucalyptol can be inhaled in large quantities. The insufflation of resorcin by dusting over the entire area of affected parts as far as practicable, is also recommended. The internal remedy most desirable is atropin in solution, one grain to one ounce of water, dose being from one to five drops, the minimum being for little children (after first detention). The tincture of belladonna may be used—from one to ten drops twice a day. As the medicament is prompt and prolonged in action, it should be given not more than twice a day, unless the dose be much smaller than is advised above. Salicylate of cinchonidine and quinine should be given as a prophylactic remedy, if there be reasons to suppose that such power is really expected by it. My own conviction is that as a prophylactic the combination of cinchonidine with salicylic acid is preferable to quinine. For the depression and melancholy it is probable that atropia will do better. For the distressing headache, joint pains and wakefulness, antipyrin, acetanilid, phenacetin, and other remedies and antiseptics will, no doubt, be found useful.

ACETATE OF LEAD IN PNEUMONIA.

PROFESSOR CROCQ, of Brussels, has found that a remedy which was formerly a good deal employed in pneumonia, but which has long fallen into complete disuse—viz., acetate of lead—is in many cases of great value. This remedy was prescribed, combined with opium, by Ritscher, and afterwards by Strecht, Leudet and others. Nothnagel and Rossbach mention it in their handbook, but consider that it is useless in ordinary cases, though they recommend it where there is œdema of the lung and in the hæmorrhagic form of the disease. Professor Crocq, having prescribed the lead salt in a large number of cases, is convinced that it frequently reduces the heart beats as much as ten or fifteen per minute in a single day, and that it exerts an equally marked effect upon the temperature, the sputum, too, becoming less in quantity and less deeply tinged. Instead of producing constipation, it is far more likely to open the bowels, but, notwithstanding, this action, there is no objection to prescribing it with a little opium in cases where diarrhœa is present, or, if preferred, trisnitrate of bismuth may be added instead of opium. Small doses are of very little use, the minimum quantity that should be ordered for an adult per diem being six grains, and this may sometimes be increased with advantage to as much as fifteen grains. This treatment may be continued for a fortnight without any symptoms of lead poisoning presenting themselves. Professor Crocq remarks that it may be given at all stages of the disease, but at the beginning in strong subjects, and when the pain is severe, its action is but slight, and so antimonials are to be preferred at that time. Where, however, resolution is delayed, when there is but little fever, where the patient is very weak, where there is enteritis or diarrhœa, and especially where the digestive organs will not tolerate antimony, acetate of lead is very valuable. Again, when the pneumonia is secondary to some other serious disease, and when the heart is acting insufficiently so that the pulmonary circulation is interfered with, as in Bright's disease, in organic affections of the heart, drunkards, and in old people, acetate of lead will sometimes work wonders; indeed, he considers that it is most valuable in serious cases. Of course it must sometimes be combined with alcohol.—*The Lancet.*

ETHER IRRIGATIONS IN STRANGULATED HERNIA.

Dr. Ivan N. Drakin (*The Annals of Surgery*, August, 1889) eulogizes ether irrigations as an excellent means for reduction of strangulated hernia. He simply pours a teaspoonful of ether over the hernial tumor every quarter or half hour, keeping it covered with compresses during the intervals. As a rule, after three or four tablespoonfuls, the intestinal loop slips down into the abdominal cavity by itself; in some cases, however, slight pressure should be applied. In the case of incarcerated scrotal hernia, it is advisable to irrigate with a mixture of ether (twenty parts) and hyoscyamus oil (four parts). When applied sufficiently early, the method is said to give most brilliant results.

Dr. A. J. Brustein (*Ibid.*) describes the case of a woman with an incarcerated umbilical hernia of the size of a man's fist, in whom, after all ordinary procedures for reduction had failed, irrigation with a small jet of ether was resorted to, taxis being continued at the same time. In three or four minutes the reduction was effected with striking ease. The action of local etherization was attributed to a rapid contraction of the intestinal wall, and to the diminution in volume of the hernial gaseous contents caused by the sudden lowering of temperature.—*Am. Journal Medical Sciences.*

PAPULAR ERYTHEMA.

R. Talc.
Oxide of zinc.
Powdered starch. . . . . āā 100 grams.
Boric acid. . . . . 3-6 " ♏

Bathe the surface with a solution of boric acid, and then sprinkle on the powder.

To prevent the affection so common in the newborn, apply a pomade composed of equal parts of vaseline and oxide of zinc.—Besnier, *Gaz. Méd. de Liège.*

SOCIETY PROCEEDINGS.

New York Academy of Medicine.

SECTION ON ORTHOPÆDIC SURGERY,

Stated Meeting, Oct. 18th, 1889.

A. B. JUDSON, M.D., CHAIRMAN.

RACHITIC PSEUDO-PARALYSIS.

The paper of the evening was read by **DR. H. W. BERG**, who stated that in this affection the rickety child from two to five years old, is unable to walk, and in some cases he cannot stand or even sit. The disability is not the result of nervous lesion but rather the result of muscular weakness, pain in the muscles and in the bones at the points of muscular attachment, flaccidity of the ligaments, and softness of the bony levers. Such a child wished to be let alone, he instinctively prefers to keep quiet. This condition is to be distinguished from infantile paralysis; by the absence of local atrophy and cold and real paralysis not so readily, however, from post-diphtheritic paralysis where the differential diagnosis will rest on the preceding occurrence of diphtheria, the recent origin of the paralysis, and, above all, on the difficulty of swallowing and speaking dependent on involvement of naso-paryngeal and laryngeal muscles. Spastic paralysis even when mild has an exalted muscular activity which serves to distinguish it from rachitic pseudo-paralysis; and the paraplegia of Pott's disease cannot be mistaken if the kyphosis is obvious. The prognosis is uniformly favorable. These are the cases which give such good results after indiscriminate circumcision. The object of treatment should be to counteract the effect of rachitic malnutrition. These children should have a great deal of milk; cod liver oil should be given unmixed; and phosphorus in the following prescription :

℞ Phosphori . . . . gr.j.
Alcohol Absolut. . . . . ♏ cccl.
Spt. Menth. Pip. . . . . ♏ x.
Glycerinæ . . . . ℥ ij.

♏. et Sig. Six minims t. i. d. to be increased one drop weekly until ten drops are given.

DR. W. L. CARR had seen a number of cases in which a striking lack of muscular power was symptomatic of rickets although bone changes were not obvious. A number of these children had been fed at the table or on patented foods. Proper attention to diet soon brings about a restoration of muscular power without tonics.

DR. R. J. DEVLIN recalled well marked cases of this affection in children who had been exclusively fed on milk from a healthy mother.

NERVOUS SYMPTOMS PRODUCED BY PHIMOSIS.

DR. T. H. HOLGATE said that in his experience with non-rickety children, the relief of preputial irritation by discriminating operative interference had removed serious nervous troubles. In one case, which he had presented to the Academy, inability to walk or stand had been relieved in this way in a child who was entirely free from evidences of rickets.

Dr. R. H. Sayre related a similar case of a boy, who from some central lesion had not walked for some years. After partial circumcision he could walk with the aid of two canes. A trouble of twelve years standing had thus been relieved in six weeks.

Dr. Berg closed the discussion. He agreed with Dr. Carr in thinking that rachitic inability to walk is sometimes present without the usual rachitic deformities. He recognized the fact that urinary troubles occur as the result of contracted prepuce, but he had never seen a case of lesion of the nervous centres cured by circumcision. He recalled a case of difficult micturition and inability to walk in a rickety child whose phimosis was not relieved because the operation was refused. The difficulty in micturition persisted, but the child walked within eight weeks after being put upon proper diet.

EXCISION OF THE HIP-JOINT.

Dr. R. H. Sayre presented a little boy on whom Dr. L. H. Sayre had operated by excision of the hip-joint. About a year ago the patient had presented himself with the hip very badly deformed from long standing disease. The thigh was flexed on the trunk at a right-angle, and abducted. A deep abscess was opened behind the trochanter, and the acetabulum and femoral head were then found to be badly eroded. The femur was divided above the lesser trochanter, at right-angles with the axis of the shaft, and the deformity was thus reduced by excision instead of by simple tenotomy which had been proposed at first. The wound was stuffed with iodoform gauze and after two months of the wire cuirass, a long traction splint was applied and the boy took a long journey to his home. At the present time there is no abduction, and but a trace of flexion with some motion in the joint.

TREATMENT OF ABSCESSES.

Dr. John Ridlon asked whether an operation would have been advised for the abscess alone. He had found that many abscesses are certain to disappear when the hip is properly treated mechanically.

Dr. Sayre said that as the abscess was causing but little disturbance, he would have postponed operating on it if the child could have been kept under observation.

Dr. Judson thought that opening an abscess, if done at all, should as a rule be followed by excision, as in the case related by Dr. Sayre on the ground that the presence of diseased bone is a greater evil than the presence of pus. He had seen no bad results follow letting the abscess alone.

Dr. A. M. Phelps said that there were some cases of abscess which he would probably not open at once, but he believed the operation perfectly harmless and desired to speak emphatically against the opinion that it is a dreadful and dangerous thing to open these abscesses.

Dr. H. L. Taylor thought that if rest and protection are secured for the joint, the occurrence of abscesses is not of serious import. The aspirator had failed in his hands apparently because it leaves shreds of nercotic tissue which prevent the abscess from closing. It seems wise in most cases to open freely, clean out easily removable débris, and close the wound. If sinuses remain, injections with a saturated solution of iodoform in ether will sometimes cause them to close.

Dr. L. A. Sayre said that on the principal that an empty house is better than a bad tenant, he always evacuates an abscess as soon as found, and by doing this antiseptically, and securing thorough drainage, there is no danger of bad results.

Dr. R. T. Morris said his usual custom is to open these abscesses at once, washing out with peroxide of hydrogen, removing débris, and establishing drainage. He related a recent case in which this procedure, followed by traction in the line of the deformity, had secured a good result. He had recently performed excision in another case in which disease of the acetabulum and femur had been produced by the application by the physician in attendance of traction in a straight line, according to Thomas' method. In excising the hip, he usually makes a section through the great trochanter in such a way as to allow the lesser trochanter to go into the acetabulum and so prevent the formation of a flail joint.

THOMAS' SPLINT.

Dr. Ridlon did not think Thomas, of Liverpool, made traction in any line.

Dr. Phelps said that Mr. Thomas would treat a case when the leg is flexed at right-angles, by lashing the patient to the splint, and then with his wrench bending the splint down as nearly as possible to a straight line. That is a form of traction which produces great intra-articular pressure and would if continued for any length of time, produce destruction of the joint.

Dr. Ridlon said that he had used Thomas' hip splint in some twelve or fifteen cases with great satisfaction. He found it cheap and easily applied. It had not caused destruction of tissue, but on the contrary, had relieved symptoms and prompted recovery.

Dr. L. A. Sayre said it seemed as if the profession were determined to misunderstand him, for he had endeavored for years past to make clear what he meant by traction in the line of the deformed limb: it is to make traction in such a way as to separate slightly the bone from the base of the acetabulum, and so prevent pressure, gradually changing the line of traction until the limb is brought parallel with the other limb, and then apply the splint; whereas, if one employed leverage as Thomas does, this pressure in the joint is only increased. Not until the limb is in proper position, can the splint be applied to advantage. One objection to Thomas' splint is that there is no traction for overcoming muscular rigidity, and hence, it seems to be fixation only, and as such does not compare in point of efficiency with properly applied plaster of Paris splints for, here the weight of the limb will produce some traction and the plaster of Paris gives the necessary fixation. Another objection is that the patients wearing Thomas' splint cannot sit down, whereas with a properly applied splint they can sit down with great comfort.

THE QUESTION OF EXCISION.

Dr. R. H. Sayre said that in the case presented the original intention had been simply to open and drain the abscess; but the diseased condition of the bones necessitated excision. As regards the conditions under which he would advise excision, if the leg were straight and the abscess causing but little disturbance, he would postpone the operation, provided the patient could be kept under observation; but if the latter condition could not be secured, he would be disposed to remove whatever disease already existed rather than allow the case to go from under observation with the disease ready to extend at any time.

Dr. Berg thought the good condition of the patient in the present case justified operative procedure for the correction of deformity.

Dr. Taylor thought that excision might be required in neglected cases, of which there probably always will be a considerable number; but the operation should be looked upon rather as treatment of the results of neglect than as treatment for hip disease.

Dr. Phelps practiced excision by an open wound, leaving the periosteum to reproduce bone. The German surgeons remove the periosteum and capsule and try to secure union by the first intention. Their results are shortening, flail joints, and relapses in a large per cent. of cases. He related two recent cases of excision in patients 34 and 23 years of age. In these cases the femoral head was destroyed and the acetabulum extensively diseased, a condition in which removal of the disease is the most rational treatment. In one of the cases, the head was found separate from the shaft. He had frequently found this condition, and believed that the head lying loose in the joint cavity is to be considered as a foreign body. It is better to remove it than to leave it to undergo decomposition and lead to septicæmia and amyloid disease. A more useful limb is left if the exsection includes the trochanter. In general, he thought excision under the age of 10 is a calamity. In the case presented, however, he thought the result was good, as extreme deformity had been corrected.

Dr. Judson thought that in excision we have no certainty of removing, together with the diseased bone, those portions which contain latent foci. He had found no method of determining whether the focus which has burst into inflammation is the only outbreak to be feared, or whether it is to be followed by others. In some patients a single abscess closes the morbid process; in others, one abscess follows another, showing that osteitis is lighted up successively in the neck, the head, the shaft, and the bones of the pelvis. An excision may fortunately remove all that is diseased, with a good immediate result; or it may leave dormant foci which come into activity one after another, and lead to a tedious and unfavorable result. Ultimate good results are obtained in these difficult cases by management with the hip splint, and without excision.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Chloralamid—Lepers and Leprosy in Norway—A Myxoma Springing from the Infra-orbital Nerve—Does Moderate Drinking and Long Life go Naturally Together?—Miscellaneous Items.

Some recent experiments with the new hypnotic, chloralamid, on frogs and rabbits tend to show that the drug is completely harmless to animals; also that the blood pressure is not materially altered. This being the case, the drug has been tried on a few patients who complained of sleeplessness. The sleep after chloralamid was deep and refreshing; its duration varied, according to individuality, between six and ten hours. The patients awoke without feeling the slightest indisposition, without headache or indigestion, or bad taste in the mouth, as frequently observed after chloralhydrate. Even very delicate patients with weak stomach did well with chloralamid, which is stated to be due to the fact that the drug is non-irritant to mucous membranes, not even to those of the most delicate structure, as the conjunctiva of the eye. In some comparative investigations into the value of chloralamid and sulphonal the former has been found to be much superior to the latter. Chloralamid is recommended in all cases of sleeplessness which are the consequences of nervous excitation of a slight degree, or of organic disease (phthisic, heart disease, spinal affections), or of neurasthenia, as also in all cases of insomnia which are not associated with vehement excitation or acute physical pain.

A deeply interesting article appears from the pen of Dr. Robson Roose on "Lepers and Leprosy in Norway." The author is distinctly of opinion that it is contagious and that there is no known medical treatment for its cure, and that isolation is the only effective measure of extirpation. In his final conclusion Dr. Roose states: "There is only one plan by which the disease can be eradicated—the construction of a sufficient number of leper hospitals and the compulsory detention of the sufferers." Sir Morrell MacKenzie has been dealing with the same subject, and is in entire agreement with Dr. Robson Roose as to the contagious nature of the disorder and the absolute necessity of measures to prevent its transmission. "The contagiousness of the disease," he writes, "was never doubted till it had nearly died out. The alarming spread of this loathsome pest in recent years is, in my opinion, due to the fact that for some time the opposite doctrine gained the ascendancy. For this pernicious error and all the disastrous consequences that have flowed and continue to flow from it the Royal College of Physicians of London is chiefly responsible."

Mr. Bland Sutton, at the Clinical Society of London, recently related a case in which a woman was supposed to be suffering from neuralgia due to bad teeth, but which was really a tumor of the infra-orbital nerve. A slight displacement of the eyeball was detected and a critical examination of the patient led to the diagnosis of a tumor entangling the infra-orbital nerve; the skin supplied by the palpebral, labial and nasal branches of this nerve was anæsthetic. Agonizing pain was experienced. Mr. Sutton removed the anterior wall of the maxilla and found the antrum occupied by a lobulated tumor. The whole of the maxilla was then removed and Meckel's ganglion exposed and destroyed by the cautery. The patient did well and made a complete recovery. Subsequent dissection of the tumor showed it to be a myxoma springing from the infra-orbital nerve and invading the orbit and antrum.

The British Medical Temperance Association meeting in the rooms of the London Medical Society has been controverting the statistics which recently attracted so much attention, showing apparently that moderate drinking and long life went naturally together. Dr. W. B. Richardson, who presided, vigorously challenged the recently revived contention that a longer span of life falls to the lot of moderate drinkers than to that of total abstainers. The report subsequently read by the Hon. Sec., Dr. I. I. Ridge, certainly went far to controvert this notion. In reply to a question addressed to 279 workhouse medical officers, "Under what circumstances are alcoholic liquors allowed to the inmates of the workhouses under your control?" 244 answers were received, from which it appears that 75 per cent. give alcohol for the sick only, 8 per cent. to the aged and infirm, 12 per cent. to the aged for extra work, and 5 per cent. never give any. The second question related to the health of the paupers; thus answered, out of 203 returns 73 state that it was unaffected, 2 that it was worse, and 3 that the sick suffered from being deprived of alcohol. With reference to a question touching the longevity or otherwise of pauper imbibers, 223 answers are forthcoming. Nineteen assert that life is prolonged, 160 that it is unaffected, 29 that it is shortened, and 15 that it is certainly shortened in the case of sick persons.

A considerable excitement has been aroused by the finding of two men dead in Leeds in a cabin in the premises of the Leeds Forge Company, where "water gas" was used as an illuminant. In accordance with instructions, several medical men proceeded to a room at the forge, in which a band practices, to make a post-mortem examination. After being in the room a short time one of them sunk down unconscious, and whilst the other medical men were attending to him several of them felt unpleasant symptoms of more or less urgency, one of them becoming unconscious. The special proceedings were stopped and the room sealed up. In accordance with instructions from the Home office, Dr. Stevenson, of Guy's Hospital, proceeded to Leeds and the post-mortem examination has been concluded. Dr. Stevenson has removed some of the viscera for examination and analysis. It is hoped he will be able to throw light on this mysterious matter.

There was a good deal of difference of opinion elicited before the Royal Commission on the Blind and Deaf and Dumb in regard to the perpetuation of blindness and deafness and dumbness by the intermarriage of the sexes thus afflicted. Some witnesses were of opinion that the intermarriage of two blind people or two deaf and dumb people had a decided tendency to perpetuate in their offspring these afflictions.

The result of extensive experiments in the German army as to the best treatment for excessive sweating of the feet has been to prove the great superiority of chromic acid over all other applications. Of 18,000 cases in which chromic acid was used 42 per cent. were reported "cured," 50 per cent. "improved," and only 8 per cent. "unrelieved." The method is first to bathe the feet, and after being thoroughly dried a 5 per cent. solution of the acid is applied with a brush. Two or three applications suffice as a rule, but the treatment has sometimes to be repeated after a fortnight.

During the month there will be some interesting discussions at the Medical Society "On the Diagnosis and Treatment of Aneurisms of the

Arch of the Aorta." Dr. R. Douglas Powell will open the discussion, and a subsequent meeting will be devoted chiefly to the exhibition of cases of aortic aneurism.

A bacillus has been discovered in sections of warts, which is always present in the prickle layer. It has distinctive qualities as regards its capacity for color, and is found both between and in the cells. G. O. M.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Section on Practice of the Academy of Medicine —The New Expectorant, Cocillana—Dr. D. C. Cocks on Eye Symptoms as Aids to Diagnosis.

At the last meeting of the Section on Practice of the Academy of Medicine Dr. R. W. Wilcox read a paper on "The New Expectorant, Cocillana," in which the results given were founded on his own clinical experience. The preparation used was the concentrated tincture, but he stated that he thought the fluid extract would be preferable on account of the absence of alcohol. The source of this drug, he explained, was the bark of an undetermined species of guarea, which was discovered in Bolivia in 1886 by the eminent botanist, Professor H. H. Rusby, of the College of Pharmacy, who first brought specimens to this city.

The principal physiological action of the drug in its crude state (powdered bark), Dr. Wilcox said, was the production of nausea, with metallic taste in the mouth; this nausea being accompanied by an early discharge of mucus and later by dryness of the throat. Its action might be stated, then, to consist of stimulation for some hours of the vessels and glands of the mucous surfaces, more especially of the respiratory tract, with subsequent diminution of activity (sedation). The dose of the concentrated tincture of the bark employed by him varied from ½ a fluid drachm to 2 drachms, given every two to eight hours. Having made a comparison of the effects of the drug with those of apomorphia in acute bronchitis, he stated that the expectorant effect of cocillana was not the first stage of the nausea, as was shown by the fact that an increase of appetite was usually observed even under full physiological doses, while the fulness of the pulse remained unchanged.

He related a number of cases in which cocillana was used, and went on to say that it was probable that in subacute and chronic bronchitis would be found the larger field for its employment. The facts that its expectorant effect was more sure than apomorphia or ipecacuanha in liquefying bronchial mucus, that it increased the appetite, and that it acted to some extent as a laxative, all commended it to favor. In cases of senile bronchitis, however, particularly when the costal cartilages are calcified, it might so markedly add to the bronchorrhœa as to be positively dangerous; especially as it was not, like belladonna and strychnia, a stimulant to the respiratory centres.

Having related another series of cases, Dr. Wilcox said it could be seen that in chronic pulmonary disease cocillana had almost its only use in liquefying bronchial secretion and relieving the acute exacerbations of associated chronic bronchitis. Under its administration the cough and expectoration diminished, the appetite increased, and the night sweats and constipation were relieved. In conclusion, he stated that he believed cocillana to be superior to apomorphia, except in cases of acute bronchitis treated within the first forty-eight hours. It was certainly preferable to ipecacuanha in that it did not so readily cause nausea and metallic taste in the mouth, and moreover assisted regular movement of the bowels. It must yield to carbonate of ammonia in chronic senile bronchitis, although the heart-beat and pulse became stronger under its use; nor could it stimulate the respiratory centre like strychnia. It was immeasurably safer in every stage of acute bronchitis than pilocarpin, because it did not depress the heart's action. On the whole, he believed that it could fully replace ipecacuanha in every sphere of action, and that in many cases it could with advantage be substituted for apomorphia, carbonate of ammonia, strychnia and other drugs classed with more or less reason as expectorants.

Dr. Rusby, the discoverer of cocillana, who was present by invitation of Dr. Wilcox, exhibited some of the bark of the plant and also herbarium specimens showing the leaves and fruit. He then made some remarks in the course of which he said it was his own practice, if a case of bronchitis came under observation early, to push the cocillana vigorously, giving from 15 to 45 minims of the fluid extract every hour for twelve hours, if necessary. At the end of six or seven hours it could usually be seen whether it was going to have the desired effect or not. In Bolivia his attention was first directed to the drug by the natives. As soon as he could get the opportunity he commenced experimenting with it upon his friends, in doses of 20, 30 and 40 grs. of the powdered bark; and he found that these accounts were for the most part fanciful. He found, however, that the inhabitants sometimes gave it in such enormous doses as to destroy life by the vomiting and purging it occasioned. He said, in conclusion, that he had anticipated that cocillana would prove a very useful remedy in pharyngitis and laryngitis, as well as in bronchitis; and in this he had not been disappointed.

The principal paper of the evening was by Dr. D. C. Cocks, on "Eye Symptoms as Aids to Diagnosis." The indifference of a large number of medical men to the eye, he said, was probably due to a lack of appreciation of the important bearing that eye symptoms have on diagnosis and treatment. Many physicians seemed to think that the eye was too delicate an organ to be treated by any but a specialist, and with the determination to turn all cases of eye trouble over to the specialist at once they felt their conscience clear to let its anatomy, physiology, diseases and treatment drop entirely out of mind; forgetting how important a knowledge of the eye and its diseases was in the diagnosis of many of those diseases which they were daily called upon to treat. He therefore proposed to bring to the notice of his hearers an outline of the more important facts about the eye and its diseases a knowledge of which was essential or helpful in diagnosis.

Diagnosis, he went on to say, was sometimes made from one pathognomonic symptom; at other times it could only be made by a careful study of the symptoms for months or years. It was therefore evident that an organ like the eye, which in some cases gave pathognomonic signs and in others symptoms which proved to be the key to the situation, could not well be turned over to the specialist on all occasions. Dr. Cocks then discussed in turn, with more or less completeness, the diseases of the lachrymal apparatus, the lids, the orbit, the muscular apparatus, the cornea and sclera, the uveal tract (iris), ciliary body and choroid, the lens, the vitreous, and the retina and optic nerve; and also took up a number of individual diseases, general in character or located in other parts of the body than the eye, and pointed out the importance of the eye symptoms that might arise in connection with them.

In speaking of the derangements of the ocular muscles he said that, as a rule, they sympathize with the general system, and wonderful results were sometimes obtained by the relief of oculo-muscular strain, where this had been the exciting cause of various symptoms in nervous individuals whose health had been below par. The correction of insufficiencies by prisms or tenotomies would often give an entirely new aspect to cases that were previously obscure. When all the external muscles of the eye were paralyzed we had ophthalmoplegia externa, a disease, not of the eyes, but of the central nervous system; the nuclei of the third, fourth and fifth nerves in the floor of the fourth ventricle and the aqueduct of Sylvius being implicated. A recurring paralysis of the fourth, or third, or sixth, was frequently the first indication of spinal or of general sclerosis. The nerves supplying the ocular muscles traversed the cranial cavity for such a distance that frequently the first symptom of a basilar trouble or intracranial disturbance was evinced by the paralysis of one or more of the muscles supplied by them; and the progress of which growths could often be watched by the successive involvement of the different muscles, while the exact location of the neoplasm was thus accurately marked out. The nature of the diseased condition also could often be diagnosed by the grouping of symptoms aided by the condition of the muscles.

While treating of the interior of the eye Dr. Cocks expressed the opinion that the ophthalmoscope should be in the hands of every practitioner, and as illustrating the facility with which a knowledge of its application might be acquired he stated that he had had medical students clearly describe the fundus of the eye after a single lesson. A choroiditis of the macula of each eye, whether occurring synchronously or consecutively, he went on to say, was almost pathognomonic of syphilis, either congenital or acquired. Its early recognition was of the utmost importance to the patient, and as the changes could be readily seen (when looked for), he had a right to feel aggrieved if his central vision was lost through neglect. In regard to the normal fundus, he could only say that its negative value in diagnosis could be properly appreciated only by those accustomed to look to the ophthalmoscope for aid.

Probably the most interesting part of this subject was the light thrown on intracranial changes and on general diseases by changes in the retina and optic nerve. The neuroretinitis of Bright's disease, with its accompanying and almost pathognomonic changes in the neighborhood of the macula, were now well known, and were of sufficient importance to demand the attention of every practitioner. Having referred to the retinitis of syphilis, he said that optic neuritis, especially if double, was one of the greatest aids to diagnosis, and related an illustrative case in which the patient suffered from vomiting and slight headache, with vertigo at times, and in which, after careful examination, he pronounced the condition ophthalmoplegia externa, and the lesion therefore nuclear. Shortly afterwards, however, he found double optic neuritis; which overthrew the nuclear theory, and established that of a slowly growing neoplasm.

In speaking of disorders of function he said that a central scotoma for red was almost pathognomonic of tobacco poisoning. Night blindness occurred in commencing atrophy of the optic nerve, in extreme cases of anæmia from fasting, and in retinitis pigmentosa. Word blindness, as a rule, accompanied lesion of the cortex cerebri; while acquired partial or complete color blindness was indicative of nerve atrophy. When monocular hemianopsia existed the condition was probably one of intraocular lesion, such as detached retina, etc.; but when binocular hemianopsia was present, an intracranial lesion certainly existed, and this lesion was along the optic tract or in the occipital lobe of the same side as the loss of vision.

In the discussion following Dr. H. D. Noyes said that the particular significance of the paper was its advocacy of a closer affiliation between the eye specialist and the general practitioner. He regarded it as a great misfortune that in every specialty the tendency of the work was to narrow the field and shorten the vision of the physician devoting himself to it; and if it should follow as a result of Dr. Cock's labors that general practitioners should less frequently than now omit to make an examination of their patients' eyes, he believed that they would have accomplished a most excellent purpose. The range of affections in which the eye was concerned to a greater or less extent was immensely large; embracing as it did not only those of the entire cerebro-spinal nervous system and the peripheral nerves, but the diseases of remote organs and the condition of the blood itself.

Dr. J. E. Weeks agreed with Drs. Cocks and Noyes that if the general practitioner would make himself more familiar with eye symptoms the community would be greatly benefited. In illustration he mentioned the case of a gentleman residing in a neighboring town who suffered very greatly from neuralgia and was finally sent to New York for examination. Here it was found that he had already irretrievably lost his eyesight by glaucoma. Any neuralgic pain, therefore, which was not clearly understood should, he thought, at least awaken the apprehension of the attending physician, so that the occurrence of such a calamity as this might be averted, if possible. He went on to say that the appearances of the lids were sometimes indicative of systemic conditions, and stated that he had known the diagnosis of nasal diphtheria to be made in this manner. The diphtheria of the nasal passages had resulted in diphtheritic conjunctivitis, and if the attending physician had been familiar with the appearances of the latter the diagnosis could have been made much earlier, and the life of the patient (who died of the disease) might perhaps have been saved.

Dr. W. F. Mittendorf thought that since we had at our command such a mydriatic as cocaine, and since the ophthalmoscope was now so perfect an instrument, there was really no excuse for not examining the fundus when light was needed on a diagnosis; and he said he felt sure that if physicians in general would take the trouble to familiarize themselves with the use of the ophthalmoscope they would find it not only profitable, but exceedingly interesting to themselves.

Dr. T. R. Pooley, in referring to inadequacy of the ocular muscles, said it was just now the fad to attribute immense importance to such inadequacy, and to perform repeated *operation for its* relief. If many of these cases were left to themselves, or, what was better, if the patient were treated for his general condition by some sensible and intelligent practitioner, this muscular insufficiency would entirely disappear of itself. What such an individual needed was proper attention to his general health, and not special treatment from an oculist. He did not, however, mean to say, of course, that cases did not sometimes occur which required to be treated by prisms, or even by tenotomy. In the course of his remarks Dr. Pooley also called attention to the significance of intra-ocular hæmorrhage. This occurred, he said, where changes, either atheromatous or syphilitic, had taken place in the arteries, and where retinal hæmorrhage was observed the chances were very strong that hæmorrhages would occur elsewhere also. He regarded this as such an important point that he considered that whenever the retina showed this condition it was the duty of the oculist discovering it to call the immediate attention of the regular medical attendant to it, since such a patient was liable to have intra-cranial hæmorrhage at any moment.

In confirmation of the correctness of Dr. Pooley's views on this last point, the Chairman of the Section, Dr. R. C. M. Page, related the case of a gentleman whom he was attending for Bright's disease. All the symptoms had shown marked improvement and the patient was about starting for the South. As he complained of some little trouble in his sight, however, Dr. David Webster was asked to make an examination of his eyes. He ascertained that the trouble was due to retinal hæmorrhage, and in consequence of the condition which he found he expressed the opinion that the gentleman was liable to die at any time from cerebral hæmorrhage. The sequel proved that the oculist was right, for he did die from this cause within twenty-four hours.

P. B. P.

NECROLOGY.

Dr. Charles H. Nichols.

Dr. Charles H. Nichols, the distinguished head of the Bloomingdale Asylum, died December 16th somewhat unexpectedly from a complication of hepatic and intestinal diseases. He had only recently returned from a visit to the European capitals in the interest of the new Bloomingdale Asylum that is now being planned. He had suffered greatly from sea-sickness and was much reduced in strength. He was a native of Maine, born in 1820, and an alumnus of the University of Pennsylvania in the year 1843. His record at the Government Hospital for the Insane at Washington for twenty years and his ten years or more in New York City have placed him in the front rank of the alienists of his time and country.

BOOK REVIEWS.

PHYSICIANS' AND STUDENTS' READY REFERENCE SERIES: SYNOPSIS OF HUMAN ANATOMY. Being a Complete Compend of Anatomy, Including the Anatomy of the Viscera and Numerous Tables. By JAMES K. YOUNG, M.D., Instructor in Orthopædic Surgery and Assistant Demonstrator of Surgery in the University of Pennsylvania, etc. *Philadelphia and London*: F. A. Davis. 1889. Cloth, price, $1.40; pp. ix, 393.

In this volume the author has endeavored to furnish a concise though complete synopsis of human anatomy. His task has necessarily been a difficult one, but by resorting to various ingenious devices he has been able to abridge in some directions without sacrificing in the matter of clearness of description. Descriptive anatomy does not afford an inviting field for such work, but we believe that Dr. Young has done his work as well as it can be done.

LECTURES ON OBSTETRIC NURSING. By THEOPHILUS PARVIN, M.D., Professor of Obstetrics and Diseases of Women and Children at Jefferson Medical College; Obstetrician to the Philadelphia Hospital. Pp. viii, 104. Philadelphia: P. Blakiston, Son & Co. 1889.

These lectures are presented in a particularly agreeable and interesting form, the author having interspersed his practical instructions with many historical allusions and literary references. The intelligent nurse cannot fail to find both entertainment and profit in their perusal. It is to be regretted that the subject is not treated in greater detail, but as far as it goes one finds everything to admire and but little to criticise.

ASSOCIATION NEWS.

American Medical Association—Forty-first Annual Meeting.

Section of Obstetrics and Diseases of Women.

The officers of the Section of Obstetrics and Diseases of Women respectfully request those who desire to read papers in that Section at the meeting of the American Medical Association to be held in Nashville, Tenn., May 20–23, to communicate the titles thereof to either of the undersigned not later than January 15, 1890.

WILLIAM WARREN POTTER, Chairman,
284 Franklin St., Buffalo, N. Y.
JOSEPH HOFFMAN, Secretary,
126 W. Diamond St., Philadelphia, Pa.

MISCELLANY.

PRIZES OF THE SPANISH MEDICO-CHIRURGICAL ACADEMY.—The Spanish Medico-Chirurgical Academy offers prizes for the best essays on the following subjects: 1. Modern Discoveries in Physics Applied to Medicine: Have they Advanced the Science of Diagnosis? 2. Limits of the Expectant Method and the Therapeutic Value of Hygiene in Chronic Diseases of the Stomach. Each prize will consist of 250 pesetas ($50), with the title of Corresponding Member of the Academy. Essays may be written in Spanish, Portuguese, French, Italian, English or German. Each essay must bear a motto, the name and address of the author being sent in a separate sealed envelope. All essays must be in the hands of the Secretary (Montera, 22, *bajo*, Madrid), on or before Sept. 15, 1890.

LETTERS RECEIVED.

Dr. W. A. Brownell, Boston, Mass.; J. Browne, New York City; Dr. W. W. Potter, Buffalo, N. Y.; Dr. J. E. Tefft, Springfield, Mo.; Paris Medicine Co., Paris, Tenn.; Dr. William A. Edwards, San Diego, Cal.; Dr. J. E. Carpenter, Stanford, Ky.; Dr. A. J. Comstock, San Buenaventura, Cal.; Dr. W. M. Moore, Paris, Tex.; Dr. A. G. Lamothe Ramsay, St. Cloud, Minn.; Dr. Andrew Seargent, Hopkinsville, Ky.; Dr. F. B. Lovell, Daykin, Neb.; Mrs. C. H. Wright, North Madison, Ind.; Peacock Chemical Co., St. Louis, Mo.; Dr. Landon B. Edwards, Richmond, Va.; Dr. W. C. Sandrock, Baltimore, Md.; Lehn & Fink, New York; Dr. Geo. C. Potter; Honolulu, H. I.; Dr. J. M. Anders, Philadelphia; The Medical and Surgical Sanitarium, Battle Creek, Mich.; Dr. F. C. E. Mattison, Chicago; Moore's Subscription Agency, Brockport, N. Y.; The Lakeside Publishing Co., Buffalo, N. Y.; Dr. Gales B. Bullard, St. Johnsburg, Vt.; Dr. Thomas A. K. Morton, Philadelphia; Fairchild Bros. & Foster, New York; Parke, Davis & Co., Detroit, Mich.; Jerome Kidder Mfg. Co., New York; The Ontario Medical Library Association, Toronto, Can.; Dr. J. Lucius Gray, Chicago; Dr. H. J. Brooks, Dixon, Ill.; Maltine Mfg. Co., New York; Dr. J. H. Goss, Fort Lamar, Ga.; Dr. Henry S. Sevan, Chicago; Dr. Geo. F. Cook, Oxford, O.; Med. Dept. Univ. of Georgetown, Washington, D. C.; Dr. Wm. Carr, New York; John C. Harris, Zanesville, O.; I. Haldenstein, New York; Dr. N. Holton, Harkers Corners, Ill.; Fred. W. Nostrand, New York; Dr. A. F. Comings, Rockford, Ill.; Sharpe & Dohme, Baltimore, Md.; Dr. William C. Rives, New York; Dr. G. F. Cook, Oxford, O.; E. Steiger & Co., Dr. A. M. Jacobus, New York; Dr. Walter Foly, Boston; Theo. J. VanHoren, New York; Dr. C. S. Pixley, Elkhart, Ind.; Lutz & Movius, New York.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from December 21, 1889, to December 27, 1889.

Major Calvin DeWitt, Surgeon (Ft. Missoula, Mont.), is granted leave of absence for one month, to take effect not later than January 1, 1890, with permission to apply at Div. Hdqrs. for an extension to include February 27, 1890.

By direction of the Secretary of War, Capt. Paul R. Brown, Asst. Surgeon, now at Trinidad, Col., will report in person to the surgeon in charge of the Army and Navy General Hospital, Hot Springs, Ark., for admission to and treatment in the hospital. Par. 16, S. O. 296, A. G. O., December 20, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending December 28, 1889.

P. A. Surgeon E. P. Stone, ordered to the "Independence," Mare Island, Cal.

THE

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ORIGINAL ARTICLES.

THE CHOICE OF OPERATIONS FOR THE REMOVAL OF VESICAL CALCULI IN THE MALE.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY W. T. BRIGGS, M.D.,
OF NASHVILLE, TENN.

The subject of stone in the bladder possesses peculiar and always fresh interest for the surgeon, and no matter how often discussed, any suggestions that may shed light on the subject are at all times welcome. The object of this paper is not, however, to present any startling or novel facts, but to calmly, dispassionately and impartially consider the question of "The Choice of Operations for the Removal of Vesical Calculi in the Male."

The safest and best method of removing stones from the bladder has long been sought but, like the philosopher's stone, has never been found. There is no *best* operation for the extraction of urinary calculi. Every case of stone has its special indications, and the best results will be attained by the surgeon who has a thoroughly practical knowledge of all plans of operating and who appreciates the paramount importance of selecting the operation best adapted to the case under consideration. American surgeons, as a rule, recognize this principle and shape their practice accordingly. I have myself done all of the operations usually practiced, except the recto-vesical. I have often congratulated myself that surgery possesses so many resources for the relief of this distressing and painful malady.

Practically, when a stone has become too large to be evacuated through the natural passages, even after free dilatation of the urethra, one of two courses may be adopted by the surgeon for the relief of the great suffering and distress incident to its long-continued presence in the bladder:

1. The formation of an artificial opening sufficiently large to permit its extraction in its integrity or after it has been fragmentized.
2. The pulverization of the stone so that it may pass or be removed through the natural passages.

The success of either of these methods is largely dependent on the thorough preparatory treatment of the patient. The preëminent success of Dudley, Mott and others, was doubtless due to the careful preparation of the subject of operation, and my own success has been greatly enhanced by a strict observance of the plan. The preparation should consist in diminishing or reducing the irritability and inflammation of the bladder and urethra, correcting morbid conditions of the urine, and improving the general health of the patient. In most cases, the treatment is followed by mitigation of the painful and distressing symptoms which have so long harrassed the patient, and in some the relief is so great that they are often disposed to delay operative procedure indefinitely. There are some cases, however, in which no treatment, general or local, has any beneficial effect. Patients, in spite of treatment, continue to become more and more emaciated and debilitated, the constitution is shattered, and the urine filled with pus and often stinking with putridity.

When judicious treatment fails to effect the desired result, it will be wise, in my judgment, to decline operative interference, because such interference will nearly always be attended with rapidly fatal consequences. I have on several occasions declined to operate under such circumstances and have never regretted it.

The first method of operation referred to—"cutting for the stone"—is one of the oldest operations known to surgeons; and although it has undergone numerous changes since the disciples of Celsus blindly cut on the gripe, it is still regarded as a useful and valuable—in many cases the only—means of ridding the bladder of its foreign occupant.

The selection of the method of lithotomy will be discussed as we advance.

The second plan of removing stones from the bladder—by crushing—a comparatively modern procedure, was devised and brought into practical utility by Civiale in 1824. It consists in crushing the stone at many short sittings, with brief use of instruments, and leaving the fragments to be disposed of by the natural efforts of the bladder.

The great number of sittings, the excessive irritation set up in the bladder and urethra by the irregular fragments of stone, and the numerous complications that follow this method formed serious obstacles to its general adoption, and it was rapidly losing its hold on the profession when our distinguished countryman, Prof. Henry J. Bigelow, happily conceived the idea of crushing the calculus and removing the fragments at one and the same sitting by means of specially devised instruments. The new method, "litholapaxy," was eagerly accepted by the surgical profession, and has now nearly displaced the ordinary operation of lithotrity. It was a brilliant discovery, and the surgical world owes an everlasting debt of gratitude to the genius of Bigelow.

In considering the choice of operation for the removal of calculi, the circumstances which influence the result of each method of operation should be thoroughly understood, their comparative value fully appreciated, and the various conditions of the patient, and of the stone itself, comprehended.

The data from which a choice is determined are:

1. The age of the patient.
2. Size and consistence of the stone.
3. The recurrence of the stone.
4. Condition of the urinary apparatus.
5. The results of the different methods.

The age of the patient is a very important element in the selection of a mode of operation. It is almost universally conceded that in children under 16 years of age, lithotomy is one of the most successful of the major operations and is really one of the triumphs of surgery. Nothing could be gained by substituting lithotrity or litholapaxy for it, even if there were no difficulties in the way of their performance.

The average rate of mortality in lithotomy is generally reported as one in sixteen. Cheselden lost one in thirty-five. The reports of St. Thomas' Hospital show one in fifty-eight. Gross reported one in thirty-six. In my own practice in children under 16 years of age, seventy-one submitted to the medio-bilateral method fully and thoroughly recovered. These results have never been equalled by either method of crushing, and I cannot understand why surgeons should desire to change the mode of operation which has in children given such brilliant success. Some very distinguished and learned surgeons have, however, advocated and practiced rapid crushing in children and have claimed good results from it. The reasons given by its advocates for the preference are, rapidity of cure and absence of cutting.

The first claim is specious. In a majority of well executed cutting operations the little patients are up in a day or two and in a week are well to all intents and purposes. Two-thirds of the cases submitted to the operation require no after-treatment except cleanliness.

In regard to the second claim, children being ignorant of the nature and magnitude of the operation, have no mental disquietude or dread of it, and the operation is so quick, so easy, and so safe that it amounts to nothing.

Statistics of litholapaxy in children are very meagre. Keegan's tabulated report of fifty-six recoveries and two deaths, made to the British Medical Association at Brighton in 1887, is the most brilliant result that I am cognizant of. All of these operations were made on Indian boys. Is it not probable that Indian boys have a peculiar tolerance of operation which is not enjoyed by boys of other countries? This supposition is confirmed and sustained by the fact that Freyer reports 143 lithotomies on Indian boys without a death.

Until a larger number of statistical tables have been gathered by different operators the relative success of the cutting and crushing methods in children cannot be positively determined. But when the small size and delicate texture of the urethra, and the high position and the irritability of the bladder, and the erethism of the nervous system in children are considered, it can be easily believed that a smooth incision in the prostatic portion of the urethra and the gentle withdrawal of the stone will be followed by better results than when the prolonged and tedious manipulations necessary in litholapaxy have been employed. I think it may be safely concluded that in children under the age of 16 years the cutting method should be chosen as the safer and better method of removing vesical calculi.

After puberty and even in advanced age, crushing is *the* operation *par excellence*, and when the environments of the case have been favorable it has proven eminently successful. It should be chosen as a general rule of practice, but other considerations, which will be discussed, should be taken into account in dealing with individual cases.

In advanced age the loss of vital integrity, the necessarily increased size of the prostate gland with its consequences, thickening and contraction of the bladder, etc., cause every method to be more fatal, and the fatality increases with the increase of age. Crushing, as a general rule, has shown better results in such cases than cutting, and should be chosen as offering the best chances of relief. My individual experience, however, does not sustain this opinion. Cutting in my hands has been as successful as has crushing in the hands of others or in my own. I lithotomized eight old men in the last few years the sum of whose ages aggregated 500 years (an average of 62½), with complete restoration of health and the return of the functions of the urinary organs. Old age alone does not constitute a bar to either operation.

The character of the calculus will greatly influence the surgeon in his choice of operation, and it is absolutely necessary that a correct knowledge of its size and consistence should be obtained, in order that the operation be suitably adapted to the case under advisement. The surgeon may form a good estimate of the size and consistence by the use of the sound, but its actual measurement by the lithotrite will give more satisfaction.

When a stone is small or of medium size, with favorable surroundings, the crushing method should unhesitatingly be chosen. Even when a stone is large with comparatively soft texture, it should be submitted to crushing. Before Bigelow proved to the contrary, it was thought that no stone more than 1 inch in diameter should be crushed; now very much larger ones are often successfully dealt with in this way. It is hard to say how large a stone can be safely crushed considering alone the size of the calculus. I successfully crushed and removed one weighing more than 3 ozs. at one sitting.

By the time, however, a stone has attained large size, serious pathological changes are produced in the bladder and associate organs by its long-continued presence, which offer serious impediments to crushing, and, in my judgment, it can be more safely and successfully removed by one of the cutting methods of operation.

A greater obstacle to the crushing operation than the size of the calculus is its consistence. The hard oxalate of lime or uric acid stone, especially if of large size, often resists the most powerful lithotrite, and even when it can be broken into pieces, the time consumed, the necessarily frequent introduction of instruments, and the marked angularity of the hard fragments, often cause serious injury to the bladder and urethra, and even death of the patient. I am aware that under the improved crushing operation very hard and quite large calculi may be successfully crushed, but I am fully convinced that a well selected cutting operation under the same circumstances will prove safer and more successful.

Lithotomy should, in my opinion, be chosen in all cases when a large calculus of the oxalate or uric acid variety exists.

In cases of encysted stone, which fortunately are very rare, lithotomy is alone suited for its removal. It should be selected also for calculi formed on foreign bodies which cannot be crushed.

The relative frequency of the recurrence of stone after the crushing and cutting methods should have great weight in selecting the mode of operation. It is acknowledged that after lithotrity recurrence happens much more frequently than after cutting. In the practice of Sir Henry Thompson, the greatest living lithotritist, a return of calculus occurred once in seven cases. It is estimated by other distinguished writers that it takes place once in every five cases—20 per cent.—when not more than 2 per cent. return after lithotomy. This would in itself be sufficient reason for choosing lithotomy in preference to the old method of crushing. But it is believed that litholapaxy is more thorough in clearing the bladder of fragments, and that consequently the recurrence is less frequent, probably not more frequent than after lithotomy. This point has not yet been settled and cannot be until extended and reliable reports in reference to it have been collected and tabulated.

The state of the urethra, prostate gland, bladder, and the kidneys often determines the surgeon in his choice of the two methods. In considering the state of the urethra in this connection two points must be determined:

1. How far the urethra will admit instruments.
2. How far the urethra will tolerate instruments.

In regard to the first, if a stricture will admit of dilatation, crushing is not contraindicated; but if the stricture is old, indurated, tortuous and accompanied with fistulæ, or if it is less advanced but rigors and fevers are produced at every attempt at dilatation, cutting should be chosen, for the reason that while it permits the removal of the stone it at the same time affords rest to the bladder and cure to the stricture.

In reference to the second, every surgeon is familiar with the difference in the temper of that canal under various circumstances and in different individuals. Its tolerance is at times wonderful. Instruments of the largest size may often be passed and retained for a considerable period of time with impunity. On the other hand, it is often so intolerant that the most delicate touch gives rise to great constitutional disturbance and even death. When this intolerant state of the urethra exists and cannot be removed by appropriate treatment, it will evidently be better to choose that procedure which will do least to ruffle the temper of the urethra. The single introduction of the staff by which the knife is guided into the bladder will certainly disturb the irritable urethra less than the necessarily frequent introduction of the lithotrite and aspirating tube used in the rapid crushing operation.

In the irritable urethra dependent on stricture nothing gives such prompt relief as a division of the stricture at the time the stone is removed by cutting. I had two cases under my observation and treatment recently in which the introduction of the smallest-sized sound caused rigors and intense urethral fever whenever used, yet after the division of the stricture and extraction of the calculi both patients recovered perfectly without rigors, fever, or other troubles.

The condition of the prostate gland must receive the special attention of the surgeon in the selection of an operation. As long as its enlargement does not interfere with the efficient use of instruments, as long as it has not caused serious trouble in the bladder by obstructing the perfect evacuation of the urine, and has not produced ammoniacal putridity of the urine, the crushing method should be chosen as the better; but when it is excessively enlarged in its central portion or is the seat of a tumor, rendering the urethral canal narrow and tortuous, causing difficulty in the introduction of the instruments necessary, a well selected cutting operation should be chosen. Should the prostate be much inflamed or contain an abscess in its texture, the cutting operation should be chosen as offering the surest relief to the patient.

The enlargement of the gland is generally associated with other pathological conditions which interfere very materially with crushing, *e.g.*, inflammation, thickening and contraction of the bladder, together with ammoniacal urine. Under such circumstances lithotomy should be selected because it drains the viscus and leaves it at rest and at the same time affords a better opportunity for applying remedies to the parts affected. Besides, an incision, especially if bilateral, is often followed by diminution of the hypertrophied gland, and if a tumor exists in its substance, it may be enucleated, thus removing obstructions and often restoring the lost power of micturition.

The choice of operative procedure in diseased conditions of the bladder should be determined by the extent of the pathological changes produced in that viscus by the irritation of the stone. If these changes are not excessive and other conditions are favorable crushing may be used with the best prospects of good results, but if a high degree of chronic inflammation has been excited, especially if pathological changes have resulted in thickening of the walls and diminution of the cavity, and often sacculation of the bladder, cutting should be chosen, no matter how small or how soft the stone.

When organic diseases of the kidneys have made much progress and are accompanied with pathological changes in other organs, all operations are fraught with danger and surgeons should content themselves with palliating the urgent symptoms and making the remaining days of the patient as comfortable as his resources will permit. If, however, in these grave cases the sufferings of the patient become intolerable and cannot be mitigated, it is his duty to offer the chance of relief that can only be given by operative measures. When renal involvement is of less degree and uncomplicated the character of operative procedure should be decided by the environments of the case. The same rule should govern the surgeon in making his choice as in other cases without reference to the condition of the kidneys.

The result of operations for stone, in cases in which there are no complications and in which a judicious selection of the method has been made, is, in the majority of cases, the removal of all distressing symptoms and the complete restoration of the health of the patient. Each method, however, is under certain circumstances perilous, and attended with greater or less rate of mortality. The relative degree of mortality of the two methods has not and probably never can be estimated by statistics, because the cases submitted to crushing are selected and the operation is done under the most favorable circumstances, while cases submitted to cutting are taken indiscriminately and therefore often present the most unfavorable conditions, with all the difficulties of large stones, diseased bladders and bad constitutions. It has been estimated by statistics that one death occurs in nine and a half cases submitted to lithotrity; one in eighteen and a half in litholapaxy; one in eleven and a half in lithotomy as a general rule; but in the hands of Dudley only one death occurred in thirty-six cases; in Metteauer's one in forty-two; in Mott's one in fifty. Dr. Allan P. Smiths, of Baltimore, operated successively on fifty-two without a death, and in my own practice seventy-four cases, including patients of all ages (seven of which were over 60), were cut without the loss of a single patient. Two deaths then occurred in succession, neither of which could be attributed fairly to the operation. I afterwards cut sixty with one death. I feel certain that if correct reports could be obtained from all American surgeons who have practiced the cutting operation they would exhibit results equally as good as those referred to.

After a careful consideration of the data presented, I think it may be concluded that some of the cutting methods of operation should be chosen:

1. In children under 16 years of age.
2. In cases in which large and hard stones are to be dealt with.
3. In cases of encysted and of sacculated stones.
4. In cases of old, indurated, tortuous strictures of the urethra, especially when associated with fistulæ, and in persistant intolerance of the urethra.
5. In prostatic enlargements which interfere with the ready introduction and manipulation of instruments.
6. In prostatic overgrowths of the central portion, or in tumors of the prostate which may be removed during the operation.
7. In prostatic enlargement associated with residual and putrid urine.
8. In cases in which tumors of the bladder complicate stone.
9. In cases in which a severe chronic inflammation of the bladder is present and persistent.

The choice of crushing methods is based on four conditions:

1. Adult patient.
2. Capacious and tolerant urethra.
3. Small or medium sized stone, or, if large, of soft consistence.
4. Bladder capacious and free from severe and persistent chronic inflammation.

When selected under these circumstances, no operation in the whole field of surgery is more satisfactory or more successful in its results. The hazard of a well conducted crushing operation under these favorable conditions is *nil*; and if a calculus could be detected and submitted to treatment in its early stage, before the general health is deteriorated and local involvements have taken place, no other mode of procedure would be desirable. Some enthusiastic surgeons are so confident of its innocence in all conditions that they have almost given up other plans of operation; but when the practice is extended much beyond the limit of the conditions above mentioned, the beneficial results are not equal, in my opinion, to those obtained from a well chosen method of lithotomy. To secure eminently successful and brilliant results from crushing, I am sure that cases submitted to either lithotrity or litholapaxy should be selected with the greatest judgment and discretion.

The old method of lithotrity, which advocated short sittings, with brief use of instruments, and left the expulsion of the fragments to the efforts of nature, has been almost completely superseded by the new method of Bigelow, in which stones are broken up so thoroughly by repeated application of the lithotrite, that all fragments may be evacuated through the aspirating tube and the entire operation completed in one sitting, however prolonged it may be. The great advantage of this method is in the rapidity of cure, the prompt removal of all fragments from the already overburdened bladder, and the brilliant success attending it. It is certainly applicable to a larger range of cases, is far more successful than the old method, and should be chosen, as a rule, in all cases in which crushing is indicated.

Notwithstanding an endless variety of cutting operations have been practiced since the days of Celsus, a few of which are regarded as valuable at the present time, no single method of lithotomy has received the unqualified approbation of the profession. Several of them possess merit, and it is the duty of the surgeon to familiarize himself with the minute details of all of the recognized procedures, in order that his resources may be multiplied. It is no doubt true that an operator becomes more familiar with an operation which he has often practiced, and will execute it with greater skill and safety; yet it is no less his duty to consider each case which comes under his observation, and to select that mode of operation which is best calculated to relieve the patient.

Some distinguished but ultra-enthusiastic surgeons have insisted that every cutting operation should be done by the supra-pubic method.

The supra-pubic operation, originated about the middle of the sixteenth century, soon fell into disuse, was revived by Mercier, and soon after extensively practiced by many of the great lights of that era, including the renowned Cheselden; but, owing to its great fatality, it soon fell into disrepute and was supplanted by the perineal operation. In 1879 it again came to the surface, and has since been growing in favor through the advocacy of Dulles, Peterson, Thompson, Guyon, Périer, and others.

Statistics of the operation as formerly practiced show the mortality to have been 30 per cent. Modern statistics, with all the improvements in the technique of the operation, and with the advantage of antiseptic appliances, show no better results. Statistics have further shown that the larger the stone, the safer, in comparison with the lateral, is the high operation, but that in stones less than an ounce in weight the mortality of the supra-pubic is greatly in excess of the perineal operation. I cannot, therefore, acknowledge that the supra-pubic operation is the only cutting method which should be practiced, but that it is one of the methods which should be chosen under certain circumstances. It has its advantages, and there is no doubt that it is the best operation when judiciously chosen. It should be selected for the extraction of calculi which are too large to be brought through the perineum without bruising and tearing the soft parts, and too hard to be fragmentized through the incision in the perineum. It should be chosen for encysted stones and for stones complicated with tumors of the bladder. As a general rule, the dangers attending this mode of operation are much greater than those attending the perineal method. It is without doubt easy of execution and certainly avoids injury to the rectum and interference with the genital apparatus.

The lateral method, modified and improved by Cheselden in the seventeenth century, and but little changed since, is more frequently resorted to than any or all other cutting operations; yet it does not satisfy anatomical requirements; its route to the bladder is not direct, there is a want of parallelism between the external and internal incisions, and it does not afford more space for the passage of the stone than some other perineal incisions.

There has been a growing conviction in the profession that incisions made in the side of the perineum are attended with more serious consequences than those limited to the centre; that severe hæmorrhage is more likely to follow lateral than central incisions, and the capsule of the prostate gland more likely to be divided.

The bilateral offers more space for the passage of a very large stone, but possesses no other advantages, and is objectionable because many important parts are divided which had better be avoided.

The median operation reaches the bladder with a smaller section of tissue than any other cutting operation, and a careful examination of the anatomical structure of the perineum clearly indicates that the raphé is the best and most acceptable point for the artificial opening necessary for the extraction of the stone. Nature seems to have purposed the median line for such an operation, for it is merely a fibrous septum formed by the tendinous union of the perineal muscles, serving to separate the important structures of the two sides and permitting the surgeon's knife to reach and open the bladder without wounding any part of great importance.

The superficial parts of the perineum are composed of highly dilatable tissue, the tension of which is maintained by the raphé itself. If this is divided longitudinally, the dilatability becomes very great. Now, if the deeper seated parts were as dilatable as the superficial, the median would be, of all methods, the one to be chosen; but the prostate gland, with the aggregation of vesical muscular fibres surrounding it, offers a serious obstacle to the dilatation of the neck of the bladder, and the extraction of a calculus of considerable dimensions would be followed by dangerous bruising and laceration of the neck of the bladder; nor can instruments for fragmentizing the stone be safely used through such an incision. Stones which could be safely withdrawn in the median operation can be easily dealt with by crushing, as a general rule. If, however, to the median there is added a bilateral incision of moderate extent in the prostate gland and the muscular fibres encircling the neck of the bladder, the dilatation is capable of being carried as far as in the superficial parts. After a longitudinal section in the raphé extending through the perineal point, and a transverse section of the deeper seated parts, the dilatability of the perineal structure is almost incredible to one who has not tested it, and almost any stone which can pass out of the pelvic outlet may be extracted without any injury to the soft structures.

This is a modification of the median suggested by Civiale in 1829 and named by him "the medio-bilateral." It is certainly the best and safest cutting operation ever devised. The advantages of this over any other method of lithotomy are:

1. *That it opens up the shortest and most direct route to the bladder.* Passing in a straight line from one-third of an inch anterior to the verge of the anus to the neck of the bladder, it facilitates the introduction of instruments and the extraction of calculi.

2. *It divides parts of the least importance.* The incision following the median line does not encounter any structures of importance, nor does the slight bilateral section of the deeper parts do violence to tissues of vital consequence. The section does not pass beyond the limits of the prostate, nor the reflection of the deep-seated fascia. There is very little danger of wounding the rectum if proper precaution be used, although the knife does pass in very close proximity to it.

One of the great arguments used in favor of the supra-pubic and against all perineal operations is the possibility of injuring the seminal ducts, thus unsexing the patient. There is no proof of such injury in any perineal operation. I have paid especial attention to this question, and in a number of sections in the perineum of the cadaver I have found no lesion of the ducts; and the subsequent history of a number of my patients has shown that many of them have become fathers of families, and in no instance has a patient been left in the condition of an eunuch. In the medio-bilateral the incision passes almost directly outward from the sides of the prostatic urethra and could not possibly encounter the ducts. It may happen that an inflammation established in the perineal tissue does sometimes injure the ducts and cause sterility, but there is no proof that sterility is a frequent sequence of perineal lithotomy.

3. *It is almost a bloodless operation.* It is in the absence of this formidable complication that the medio-bilateral is seen to the best advantage.

The ligature and shirted catheter are in constant requisition in the lateral and bilateral operations; but when the incision closely follows the middle line, even if it encroaches on the bulb of the urethra, which it generally does, no vessels of any size are divided, since they have spread, so to speak, on the outer side of the raphé, while the cross section, passing only a few lines from the raphé, encounters no arteries of importance, so that the loss of blood is very small, seldom amounting to half an ounce. This immunity from hæmorrhage depends on the incision being made strictly in the middle line.

4. *It affords a passage for the removal of any calculus which can be safely removed through the perineum, and is the best route for free drainage.*

A frequent objection to the median and the medio-bilateral operation is that the incision made is not sufficiently large to permit the extraction of large calculi. It is true that the median is only suitable for the removal of small or medium sized stones, which, as a general rule, may be easily and safely removed by litholapaxy; but when a little nick is made on either side of the neck of the bladder, constituting the medio-bilateral operation, the deep-seated parts will admit of extension to almost any degree necessary for the removal of stones, which should be extracted through the perineum. I never make the bilateral section more than six lines in extent —just large enough to admit the finger into the bladder; the dilatation of the deeper parts is then easily and safely effected, provided it is done slowly and gently. To this part of the operation the adage, "festina lente," is peculiarly applicable. Its importance cannot be too strongly impressed on the operator. In some cases, especially in persons advanced in life, the neck of the bladder is firm and undilatable, even under continued gentle manipulation. When such is found to be the case, the incision should be enlarged to a sufficient extent on each side with a probe-pointed bistoury, guided by the finger, to permit the easy extraction of the stone. When a stone is too large to be removed through the incision without doing violence to the soft parts, it should be fragmentized with suitable instruments and the fragments extracted through the perineal opening.

The crushing and withdrawal of stones through the perineum has been regarded with an unnecessary degree of fear. It is incomparably safer than forcible extraction of large calculi. That it is a safe resort is attested by numerous instances in which soft calculi crushed in the blades of the forceps have been removed piecemeal from the bladder without any evident ill effects. This has happened in a number of cases in which I have operated, and in many I have intentionally crushed large stones through the perineal wound without in the least increasing the risk of an operation.

If the stone is too hard to be readily crushed, the surgeon should not hesitate to make a suprapubic section, the success of which is greatly enhanced by the thorough drainage through the lower opening.

4. *It reduces the death-rate to the minimum.*

Possessing, as I think it does, the advantages mentioned, it is my conviction that the medio-bilateral operation, properly executed, is almost devoid of danger to life, and that in the absence of organic disease of the kidneys or other vital organ, every patient submitted to it will recover. It is followed by very little if any shock, by reason of the slight injury to important structures. It limits the loss of blood to the minimum, is seldom the cause of surgical fever, and in a majority of cases no unpleasant symptoms ensue. Patients are usually up in a week, and in from twelve to eighteen days, as a rule, the wound is entirely healed. In six cases in my practice the wounds healed by the first intention, no water passing the wound after the first day.

The statistics of medio-bilateral lithotomy have, so far as I know, never been collected and published. The late Prof. S. D. Gross, in the last edition of his valuable work on the urinary organs, did report twenty-two cases followed by complete recovery. At the meeting of the American Medical Association at Chicago, in 1877, I reported forty-six cases, all successful. Since that time I have operated by the same method on ninety cases, making in all 136 cases, with three deaths.

The success of the medio-bilateral operation has not been limited to my practice. Dr. J. R. Weist, of Richmond, Ind., has reported to me six cases in his practice with successful results. The late Dr. J. W. Thompson, of Paducah, reported twelve cases, all successful. My son, Prof. C. S. Briggs, of Nashville, has performed the operation in five cases, all successful. Dr. Wm. Wright, of Huntingdon, Tenn., operated on a boy 12 years of age with success, and Dr. D. M. Evans, of Union City, Tenn., did the operation on an adult with success, making an aggregate of 183 cases, with three deaths, one in sixty-one.

In conclusion I make the following deductions:

1. No operation is adapted to all cases.
2. Litholapaxy is incomparably superior to lithotrity, and should always be practiced in selected cases.
3. The supra-pubic should be chosen for extraction of very large and hard stones.
4. The medio-bilateral should be chosen in all other cases, because:

a. It affords the shortest route to the bladder.
b. It divides parts of the least importance.
c. It is the most bloodless operation.
d. It affords space for extraction of any calculus which can be removed through the perineum.
c. It affords the best route for drainage.
f. It reduces the death-rate to the minimum.

THE NON-SURGICAL TREATMENT OF STRABISMUS CONVERGENS.

Read in the Section of Ophthalmology at the Fortieth Annual Meeting of the American Medical Association, June, 1889

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The non-surgical treatment of strabismus convergens is not a novelty. The text-books on ophthalmology mention the fact that some cases of strabismus convergens, if taken in time, notably in the periodic phase, are amenable to treatment, but the majority of authors quickly dismiss the subject, and hasten on to an elaborate description of the more popular operative process. There are, however, some exceptions, and among these, Dr. Landolt's excellent book on "Refraction and Accommodation" is prominent; with the clearness and precision which always characterize his work, he enters minutely into the details of the non-surgical method, pointing out its advantages and giving rules for its execution. In this book he strongly advocates its careful adoption; and in his paper read before the Ninth International Medical Congress, he again sounded a note of warning against operating on cases of strabismus convergens without previously testing with great care the action of the muscles when the proper relation between accommodation and convergence is reëstablished.

It is to be regretted, however, that Dr. Landolt did not emphasize more how much can be accomplished by restoring the balance between these two functions. If the tendency of the age were toward conservatism, a word would have been sufficient, but the trend is quite in the contrary direction and in this matter, at least, it is time to put on the brakes. The treatment of strabismus has suffered from careless execution in the past, and there is danger that it may again suffer from indiscriminate and hasty operations in the present. It is really appalling to witness the assurance with which many tyros in ophthalmic surgery perform tenotomy, without a moment's hesitation as to the future results, and plenty of evidence can be adduced to prove that some who are not tyros, firmly believing that tenotomy is the only reliable method, operate too hastily to be consistent with safety. Why this condition of things should be so prevalent is difficult to explain, unless by the supposition that the former are ignorant of the claims that have been made for the non-operative treatment, and that the latter ignore them, being unwilling to allow sufficient time for this method to accomplish the result. That the result is accomplished in time, Nature, our best teacher, is constantly manifesting, for it is a well known fact that many cases of strabismus convergens are spontaneously corrected as the patient advances in years. If Nature accomplishes this feat when left to her own resources, is it not worth while to investigate her method of operation and profit by her teaching?

It is universally admitted that concomitant strabismus convergens, in hypermetropes, is caused by the excessive tension of accommodation necessary for distinct vision, overstepping the limits of the negative range of relative convergence; or, in other words, by the tension of accommodation exceeding the quota of the positive range of relative accommodation. The balance between these correlative functions being destroyed, over-convergence takes place, clear images are obtained at the expense of binocular vision, and strabismus is established. It should not be forgotten, however, that although the balance between accommodation and convergence is destroyed, their correlation is not abolished, and that it is in obedience to the law of reciprocal action which governs it, that over-convergence supervenes, and is maintained. On the survival of this correlation, the possibility of correction entirely rests.

Nature meets the difficulty by gradually limiting the range of accommodation, thus restricting the patient from excessive tension of accommodation, while it leaves the range of convergence unimpaired. When in the course of time these two functions approach equilibrium, the inciting cause having ceased to be operative the strabismus disappears, if the internus has not become permanently shortened. It will be noticed that the main point, in Nature's process, is the restoration of equilibrium between accommodation and convergence. The non-surgical method, in view of this fact, starts out to restore the balance between these functions, by removing the necessity for excessive accommodation, *i. e.*, by correcting the error of refraction. This, however, is not usually sufficient. Habitual accommodation persists in spite of optical correction. Mydriatics must be brought into operation, and by this means, the contracted ciliary muscle is temporarily set at rest. Then, if the internal rectus is not permanently shortened, a sometimes rapid, but generally a gradual relaxation of the muscle takes place, and *pari passu* the squint is diminished or corrected. In cases of periodic strabismus quite a rapid amelioration may be anticipated, and in many cases of alternating and in some of the established monocular form, the result is at times surprisingly quick. In the latter class of cases, however, an immediate correction is not to be expected, and when, as it usually happens, the deviating eye is quite amblyopic, something should be done in addition, to improve its vision, bring it into action and thus expedite the correction.

Experience teaches, and this is the point, that sooner or later the squint is corrected in a large percentage of the cases. Of course there are some cases in which the internal rectus is hopelessly shortened; in these tenotomy is the only remedy, but it must be first ascertained whether the internus is thus shortened, and this cannot be determined by correcting the ametropia and instilling atropin for a week. And now we have reached the point, where I will be found at issue with many of my professional brethren. A great many ophthalmologists claim that after having properly corrected the ametropia, instillations of atropin for a week will suffice to effect all the change in the degree of convergence that can be expected; in other words, that the muscle in this time has reached the limit of extensibility, and, in accordance with this belief, they proceed to operate at the expiration of this period, and before in many instances. The claim is erroneous, for I have repeatedly witnessed a gradual decrease in the angle of convergence, extending over weeks and months, and although it must be admitted that a case which has not been at all affected by atropin in a week, does not give great promise, the treatment must not be considered a failure until three or four weeks have elapsed. If gradual improvement is noted during the first week, and by careful examination the least amelioration is detected, the treatment is to be continued, even though it may take a long time, in the hope of securing a perfect correction and possibly a cure, without injuring the integrity of the muscle.

It may appear from these statements that I am waging war against tenotomy. Such is not my purpose. In certain cases, nothing can be substituted for a carefully performed tenotomy. But I certainly do protest against hasty operative interference when Nature, properly assisted by science, can and does accomplish the result. I am pleading for the internal recti muscles. Tenotomy needs no champion. But the interni most certainly need a protector.

The assertion that tenotomy of the internal rectus in concomitant strabismus convergens is a very simple operation and devoid of all danger is, to say the least, as misleading as it is common. The technique of the operation is indeed simple, but the delicate discrimination requisite to decide, first, whether an operation is necessary, then what operation is indicated and, finally, how much of an operation to perform, requires an amount of judgment which at once places this operation beyond the pale of extreme simplicity. The second clause of the assertion is absolutely untrue. For if tenotomy is performed without previously having given the non-surgical method a thorough trial, the number of cases in which this method succeeds, will indicate the number which the operation over-corrects. In other words, if in a given case the angle of deviation be equal to 40° and it can be reduced without operative interference to 10°, and the operation is performed without giving this method a thorough trial, then all that goes to correct over 10° is over-correction, and in the course of time, an insufficiency of the interni and possibly a divergent strabismus will supervene.

The principal objection raised to this method is that tenotomy does in a few days what it takes several weeks and even months for the other method to accomplish. Now, in the first place tenotomy, if carefully performed, does not accomplish the result in so short a time; and in the second place, it should be borne in mind that the object of every physician is to do that which is ultimately best for the patient. If a case of strabismus convergens is operated before a thorough course of treatment has been carried out, it is simply trusting to chance whether the eyes are to remain parallel, or in the course of time suffer from insufficiency of the interni, or exhibit divergent strabismus. Time, which plays so important a part in this objection, sinks into insignificance and a matter of no consideration, when compared to the possible future discomfort of the patient. This objection certainly loses strength when analyzed.

The second objection is that while the method may be true in theory, it is impracticable in its application, and when put to the clinical test results in failure in the majority of cases. This being a practical objection, a practical answer is desirable, and this is best done by the recital of facts, thus allowing these to speak for themselves.

The danger of hasty operative interference was forcibly brought to my notice about nine years ago, when after having used atropin for five or six days, I operated on a very marked case of established strabismus convergens. I was in the habit of allowing the atropin more time to do its work, but there was so much deviation in this instance, that I considered the operation perfectly safe. The result immediately after the operation was very satisfactory, although slight convergence persisted, but about five months afterward the child was brought back to me with a very perceptable divergent squint, and the mother expressed herself very strongly on the subject of operating on eyes and making them go "the other way." From that date I have had no more cases of operative divergent strabismus, of my own manufacture, because I have never operated upon a case of strabismus until I had become perfectly satisfied that the non-surgical treatment was insufficient. My experience with this method has been uniformly gratifying, both as a curative process and as a preliminary process to the operative treatment, and I have always strongly advocated its use both in the lecture room and in the clinic. The patients were always found perfectly willing to undergo the course of treatment, and in many instances a decided preference in its favor was expressed. The discomforts accompanying the use of the mydriatic, when complained of, were much mitigated by the use of stronger glasses for near work, and the orthoptic measures; exercises for the amblyopic eye, etc., were quite well followed in the majority of cases. The latter, however, it must be admitted is the most difficult part to have successfully carried out, but then the orthoptic measures are not the incumbrance of this method alone, for if it is desired to obtain an ideal cure of strabismus, *i. e.*, binocular single vision, it will be necessary to bring these measures into operation as a compliment to tenotomy.

In the clinic a good deal of difficulty is experienced in prevailing upon patients to strictly follow out the directions given for eye exercises; for this reason I have not laid so much stress on this part of the treatment in clinical practice. And in order to ascertain the results obtained by correction of the ametropia and the use of atropin alone, I began on the 1st of January, 1889, to keep a private record of all the cases which applied for relief of this deformity in my service at the Illinois Charitable Eye and Ear Infirmary. The record is not as complete as might be desired, but it nevertheless shows in a conclusive manner what can be accomplished by the non-operative treatment.

The method pursued was as follows:

1. Measurement of angle of convergence, obtained with perimeter by Landolt's method. Examination of motility of squinting eye. Ophthalmoscopic measurement of refraction. Subjective examination of manifest hypermetropia. Test of vision. Instillation of *atropin once* or twice a day for a week, then measurement of angle of deviation. Measurement total hypermetropia.

2. *Treatment:* Glasses were prescribed correcting the total ametropia; atropin to be used daily until parallelism was obtained. Then gradual decrease of dose; until accommodation was performed without over-convergence. If after the effects of atropin had passed off, over-

convergence reappeared, atropin was again ordered until desired result was obtained. The patient was then discharged with instructions to use the glasses constantly, and report if any tendency to squint should be noticed.

From January 1st to June 1st, twenty-five consecutive cases are recorded. Of these there were of periodic strabismus 3, 1 cured, 2 much improved; 1 (angle of deviation decreased from 25° to 5°). Alternating strabismus, 1 case, improved, axis nearly parallel. Established monocular strabismus convergens, 21 cases. The right eye deviated in 15, the left in 5.

Results: In 10, parallelism. In one of these slight divergence was noted, due to operation 3 years ago; 3 much improved, angle ranging from 5° to 8°; 5 not affected by treatment; 3 no record.

Parallelism was recorded in two or three cases, while still under atropin. Unsatisfactory as this may seem, it is so only in appearance, for if parallelism can be induced with atropin, it is only a question of time when it will continue without the mydriatic.

As children give very unsatisfactory answers when tested for glasses, they were prescribed by ophthalmoscopic measurement made under the effects of atropin. Measurements made before using atropin are unreliable. I may add that no difficulty was experienced in making the examinations and that the patients or their parents, were perfectly willing to procure the glasses and follow out the course of treatment. The details will be found noted in the tabulated record appended.

Without pretending to draw any positive conclusions or make sweeping generalizations from the twenty-five cases, the number being too small, I present them as illustrative of what the non-surgical treatment can accomplish even when deprived of that most valuable auxiliary, orthoptic exercises. To the fact that the record is not complete enough to satisfy the hypercritical, I am perfectly sensible, but the most important data will be found noted with as much accuracy as circumstances would permit. Out of twenty-one cases of confirmed monocular strabismus convergens, ten were corrected, and three have been so much improved, that total correction is simply a question of time. Of three there is no record. Only five cases remained unaffected, and will be operated upon in the near future. Does not this record justify a thorough trial of the non-surgical method?

I beg you to believe, gentlemen, that I should not have presumed to present myself before you as an advocate of this method of treatment, if armed only with an experience derived from so scant a display of cases, but I am supported by a profound conviction of its value, the result of observations ranging back over nine years, during which I have given these cases considerable attention; and the motive which prompts this paper is not I assure you, a spirit of criticism, but an earnest desire to see a method which I know to be good, put more generally into practice. Careful observation and inquiry have elicited the information that hasty operative interference in concomitant strabismus convergens is unfortunately very common. Experience teaches that it is attended with danger. Is it not time to call a halt in our rush for radical measures, and consider carefully a method which commends itself, not only by its rationality, but, by its ability to correct in many instances this common deformity, and in others to prepare in the way for a safer and more accurate operative procedure.

Date.	Name.	Age.	Duration.	Diagnosis.	Degree.	Refract.	Vision.		Treatment.	Duration.	REMARKS.
							R.E.	L.E.			
									Oper. 3 yrs. ago.		
Jan. 10.	A. S.	14	. . . .	R. C.	50	Hm. 3 H. 5.	20–30	20–20	Atr. glass . . .	May 2 (3 weeks).	Slight divergence.
" 26.	R. D.	13	2 years.	R. C.	35	Hm. 1 H. 3.	20–30	20–20	" " . . .	Mar. 18 (3 "	Much better.
Feb. 7.	A. P.	15	14 yrs.	R. C.	25	L.E.H. 3 R.E.H. 5	. . .	20–20	" " . . .	Mar. 14 (3½ mos.)	No effect (Aug. 20).
" 9.	C. L.	5	10 mos.	R. C.	32	H. 2.50.	. . .	. . .	" " . . .	May 8 (3 mos.)	Much better.
" 16.	C. B.	7	7 mos.	R. C.	22	H. 4.	. . .	. . .	" " . . .	April 23 (2 mos.)	Corrected.
" 16.	F. C.	15	15 yrs.	R. C.	25	H. 2.	20–100	20–20	" " . . .	May 15 (3 mos.)	Much better.
" 21.	M. S.	9	. . . .	Al	20	H. 5.	. . .	. . .	" " . . .	. . . .	" "
Mar. 12.	T. M.	6	3 yrs.	R. .C.	45	H. 2.	A.	G.	" " . . .	April.	No improvement.
" 12.	V. O'K.	10	7 yrs.	P.	25	H. 6.	. . .	. . .	" " . . .	April 28.	Parallel nearly.
" —	K.O.M.	12	. . . .	R .C.	50	H. 5.	A.	G.	" " . . .	April 18.	Corrected.
" 21.	A. K.	10	. . . .	L .C.	20	H. 4.	20–40	20–100	" " . . .	April 28.	"
" —	M. T.	11	7 yrs.	R .C.	30	H. 3.	20–50	20–20	" " . . .	April 18.	"
" 16.	E.M.B.	8	. . . .	P	15	H. 4.	G.	G.	" " . . .	April 11.	"
" 16.	E. V.	5	. . . .	R .C.	15	H. 5.	A?	. .	" " . . .	April 25.	"
April 15.	G. M.	5	. . . .	L .C.	25	H. 4.50.	. . .	. . .	" " . . .	May 4.	No better.
" 25.	P. B.	7	5 yrs.	L .C.	30	. . . .	. . .	A.	" " . . .	. . . .	. . . .
May 2.	M. S.	6	2 yrs.	R .C.	40	. . . .	. . .	. . .	. . . .	. . . .	No better.
" . .	L. B.	9	. . . .	L .C.	35	H. 2.	G.	A.	Atr. glass . . .	May 16.	Better.
" . .	W. T.	20	19 yrs.	L .C.	55	. . . .	. . .	. . .	. . . .	. . . .	Did not return.
" 14.	C. D.	19	. . . .	R .C.	40	R.H. 1 L.H. 1 50	20–50	20–20	. . . .	. . . .	. . . .
. . . . .	D. K.	2	. . . .	P. S.	. . .	H. 3.50.	. . .	. . .	Atr. glass . . .	. . . .	Corrected.
May 16.	A. B.	13	12	L.E.S.C.	35	H. 6.50.	50–20	20–200	" " . . .	June 1.	"
" 16.	T. H.	16	9 yrs.	R.E.S.C-	50	H. 4.	20–40	20–20	" " . . .	June 4.	No better.
" 18.	R. H.	19	18 yrs.	R.E.S.C.	30	H. Ast.	20–200	20–20	" " . . .	June 14.	Corrected.
" 21.	M. M.	7	4 yrs.	R.E.S.C.	25	H. 3.	20–60	20–20	" " . . .	June 4.	"

Parallel, 10; diverg., 1; M. B., 6; {3 nearly parallel. 3 much improved. N. B. 5 N. R. 3.

170 State Street.

DR. KNAPP said: For many years I have been in the habit of trying the non-surgical treatment in all young cases. A certain number have been cured, but the number was not so great as in Dr. G.'s series. It is a minority, perhaps not even what is called a respectable minority; certainly it does not reach 20 per cent. I have never operated before a fair trial with glasses has been made, for at least three months, mostly six months or a year or two. It seems that Dr. Gardiner has not drawn into the circle of his investigations the remaining latent convergence, which in my experience is constant or almost constant, which exists in most cases without asthenopic complaints.

DR. AYRES, of Cincinnati, said that he considered the sentiment of the paper in the right direction. We all operate much less frequently than we did a few years ago. He had a case where glasses were worn for eight years, and the eyes were then parallel and there were no asthenopic symptoms. I encourage patients to use glasses, and try to keep them under observation for a year or two, if possible. I would hesitate to operate unless I could not see the effects of glasses for a period of a few months at least.

DR. KEYSER: I have been for some years carrying out the idea that Dr. Gardiner has presented, but I must suggest that a longer time be given before any operations are made. I agree with Dr. Knapp that it is necessary to wait a longer time than two or three weeks. It is necessary to wait three, four and six months. I have had some excellent results with the correction of the ametropia only after three to six months. The operation of tenotomy should not be made too soon after the correction. I always wait a considerable time, especially if I see any changes for the better are showing themselves. I lately exhibited to my class a boy with most perfect success of the correction of the strabismus with the correction of the ametropia, which took six months for the cure.

DR. J. L. THOMPSON, of Indianapolis: Every year added to my experience makes me more cautious in recommending an operation for the cure of strabismus convergens, and causes me to urge the more frequent trial of the proper lenses instead. We should do all in our power to educate the people concerning this matter. Often have I prescribed glasses for children under 3 years of age and in one case before the second year, and in several this plan has sufficed without my having had to operate. Again, in cases where this has not been sufficient after six months, atropin has been used for three months in addition to the glasses, but the parents have also been urged to practice the defective eye many times a day. They must not simply be told that this is necessary, but they must also be informed that the state of the child's vision is almost altogether within their power. They must carry this injunction as did the Jews their laws, as frontlets between the eyes, written also on their gate posts, that, going in and out, to be read and practiced. Operations for strabismus are rarely even what we desire them to be. Perfect successes are seldom obtained, and in some, when the eye has become amblyopic from exclusion long before the operation, we may have an excellent immediate result from strabotomy, and this may continue for months or a year; and yet, in some of these, when they step into our offices, years afterwards, with their eyes turned out even more than they formerly turned in, such a terrible feeling of goneness comes over us that we wish they never had been touched. This must occur to all operators, no matter how skilful or expert they may be. If, then, perfect results rarely obtain from operative procedure in such cases, we should so educate the profession and, through them, the community, as to cause them to seek early advice, in order that benefit from glasses and other treatment may be entered upon.

DR. CHISOLM said that there was a general disposition to defer operation in crossed eyed children until they reach 8 years of age at least. We are frequently consulted by much younger children. During the delay or interval before the operation of tenotomy a good length of time admits of the use of glasses and atropin to allay excessive muscular spasm. For months this course is usually pursued, but my experience is that I do not get the large percentage of cures that others have obtained. I should think that 10 per cent. of cures would be a larger percentage than my experience would warrant. Yet the method was a good one and is now generally adopted.

DR. STEVENS said: The view of procedure in strabismus will depend somewhat upon the view which we take of the nature of the cause of the defect. If we accept without question the theory of our great master, Donders, we shall act differently from what we would do were we to accept that of Schweigger and many others. If we are dealing with a simple functional trouble, we treat it as a functional trouble. If, however, we are dealing with anatomical conditions, we must deal with it by mechanical measures. There is a large proportion of cases of apparent convergent squint which, in my opinion, depend upon a vertical deviation. If we operate for convergent squint in such cases, we shall of course induce, at a later period, divergent strabismus. We can not, it appears to me, make sufficiently accurate estimations of the angle of strabismus by the perimeter. We should use the diplopia tests, and a full correcting operation should only be done by these tests.

In closing the discussion Dr. Gardiner stated that he had been misunderstood regarding the length of time he would follow up the treatment, the period of one month being the *minimum limit in all cases.*

ANÆMIA AND NASAL STENOSIS.

Read before the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, at Newport, June, 1889.

BY H. HOLBROOK CURTIS, M.D.,
OF NEW YORK.

I think we may be justified in assuming that recent progress in nasal surgery has instituted a new era in laryngology, otology and rhinology. The reflex neuroses dependent upon nasal stenosis have been elaborated.

Simple asthma and hay fever, in a vast majority of cases, have been brought within the list of curable complaints, and to-day the most stubborn opponents to the employment of free surgical procedures within the nostrils are one by one entering the van with those who have long since disregarded the ancient traditions of laryngology. In otology, chronic otitis media and tinnitus are admitting of better explanation, and a rational treatment is being instituted whereby, to the credit of the rhinologist be it said, thousands of the deaf and distracted are finding themselves susceptible of relief. If the example set by this Association, in uniting the departments of otology and laryngology, be followed by our local societies, the science of otology may be advanced beyond present conception. It is very easy to generalize upon the brilliancy of certain operations, and enough has been written and read before the various laryngological societies of the United States during the past five years to conclusively prove that good work has been done and much benefit derived therefrom. It is the province of this paper, however, to touch upon a single condition, namely, anæmia and its relationship to nasal stenosis. In a paper read before the Ninth International Medical Congress at Washington in September, 1887, I attempted to classify the various deformities and conditions which produce stenosis, and to elaborate the great gain to be derived from radical surgical procedures in their treatment. At that time the facts were deduced from some 150 cases operated upon with the nasal saw, and about 75 in which was employed the nasal trephine. The conclusions were simply drawn from the great constitutional relief experienced by the patients, and from personal observation. The one item of mathematical accuracy in the cases there described, however, was expressed in the reported gain in body weight. Since that time my operative cases with the trephine have exceeded 400. Aside from the fact that one might be justified, from these figures, in forming a pretty exact estimate as to the value of the work, it has been my endeavor to keep more exact data as to the constitutional improvement after operations for the relief of nasal stenosis. In my recent cases statistics as to weight, chest measurement, capacity of lungs, and spectrum analyses of the blood are carefully tabulated. While we will not go into the details of the quite unique results the remainder of the table shows, let us dwell for a few moments upon the consideration of the analysis of the blood.

The improvement in color of the skin, which phthisical patients especially exhibited after the relief of a marked stenosis, suggested the possibility of keeping a record of the relative amounts of oxyhæmoglobin existing in the blood at the time of operating, and again some weeks afterward. The most ingenious hæmatoscope of Hénocque enables one to do this with even greater exactness than with Fleischl's hæmometer, and also offers special advantages in determining the "activity of reduction," so called in the change of arterial blood to venous. The spectrum of oxyhæmoglobin may be obtained by holding the spectroscope at an angle over the thumb nail and observing, after quickly ligaturing the thumb below, how soon the two absorption bands of oxyhæmoglobin disappear; or, in other words, in how many seconds the oxygen is absorbed by the capillary network, the spectrum of reduced hæmoglobin being invisible by this method. The activity of reduction is altered by fasting, exercise, repose, cold, heat and electricity, and more or less by all pathological conditions. In a state of health the absorption bands disappear in about one minute; in altered physical states the limitation varies between twenty-five and ninety seconds. This fact is assumed by Hénocque to possess a clinical importance in certain diseases, but it does not interest us here.

The hæmatoscope of Hénocque consists of two glass slides superimposed in such a manner that they are separated three-tenths of a millimetre at one end, but in contact at the other, the length of the slide being 60 millimetres. We thus have a prismatic space between the glass slides varying from zero to three-tenths millimetre, into which we allow a few drops of blood to flow. Then, by placing the slide under the spectroscope and moving from right to left, for every millimetre we advance the blood layer increases five one-thousandths of a millimetre (five micra). In a series of careful experiments with solutions of oxyhæmoglobin, normal blood, etc., it has been found that a solution of 14 per cent. of oxyhæmoglobin of a thickness of 70 micra (70 one-thousandths of a millimetre) presents under the spectroscope the two characteristic absorption bands of oxyhæmoglobin between the lines D and E. The division of the lower plate into a scale of 60 millimetres makes it possible to express in thousandths of millimetres (micra) the exact thickness of the blood layer, and hence enables the calculation of a table which at a glance shows the percentage of oxyhæmoglobin; for if we are unable to get the bands of oxyhæmoglobin distinctly and of equal obscurity until the slide has been moved to the division 28 millimetres read on the scale of the lower slide, we have required just twice the thickness of the blood layer to obtain the characteristic spectrum ; hence the blood contains but 7 per cent., or one-half the normal percentage of oxyhæmoglobin. One has consequently only to read the number on the scale corresponding to the slit of the spectroscope and, by consulting the table, ascertain immediately the percentage of contained oxyhæmoglobin. By this method of examination, which is the quickest and as accurate as any of the methods yet advanced, we have a tolerably definite standard by which to ascertain the condition of the blood.

J. Loos has reported that careful tests made in von Jaksch's clinic have led him to place more reliance in the hæmatoscope for rapid demonstration than on any of the numerous hæmometers, hæmatimeters, etc., yet discovered. The rapidity and ease with which this instrument may be employed makes the method contrast sharply with the tedious detail of other means. By it one is enabled to estimate the improvement of a patient while taking iron, and to observe, unfortunately, that the percentage of oxyhæmoglobin decreases at once upon discontinuing the dose. On the other hand we demonstrate that the increase brought about by opening the nasal passages remains constant. The physiology of nasal breathing has been made the subject of a carefully prepared thesis by E. Bloch, of Freiburg[1], who has determined, by a most exhaustive series of experiments, the laws which govern nasal respiration, the most important of which is the following: "Inspired air, in its passage through the nose, gains in heat five-ninths of the difference between its temperature and that of the body," which, expressed mathematically, would be: $x = \frac{5}{9}$ (98½° t.), t. being the temperature of the inspired air; x will represent the added increment of heat resulting from nasal respiration. The important bearing this has upon the respiratory act is self-evident, and it is chiefly due to the restoration of a process which adds so much heat and aqueous vapor to the inspired air as does nasal breathing that the extraordinary good done the individual is accounted for.

Patients with nasal stenosis, as will be seen by referring to the tables, are invariably anæmic. The twenty cases given below are taken without selection, and represent an average of the blood analyses found in these conditions.

It is not the intention of this paper to inquire further into the specific causes which bring about the increased oxidation, as shown in the tables, nor to attribute to the relief of nerve strain, or to the increased lung capacity, their respective shares as elements of constitutional improvement, but to simply advance the proposition that anæmia is due in very many cases to nasal stenosis, a fact which was commented upon by me several years before I made use of the hæmatoscope to demonstrate it.[2]

Time elapsed after operation.	Weight.	Chest.	Spirom.	Oxyhæmoglobin. Per cent.	Increase Per cent.
No. 1, 8 weeks .	130–134½	30 –30	205–215	6 9– 9.3	2.4
No. 2, 8 " .	132–137	31½–32	245–256	7.5– 9.5	2
No. 3, 10 " .	143–150	33¼–33¾	185–190	5.5– 9.3	3.8
No. 4, 10 " .	126–129	31½–31½	200–219	7.5– 8.5	1
No. 5, 13 " .	115–126	30 –32	215–265	4.5– 9.5	5
No. 6, 3 " .	140	. . . . .	. . . . .	9.5–10.0	0.5
No 7, 4 " .	134	. . . . .	150–165	9.3–11.0	1.7
No. 8, 1 " .	. . . . .	. . . . .	. . . . .	10.0– 9.3	0.7
No. 9, 10 " .	139	. . . . .	. . . . .	6.0–11.5	6.5
No. 10, 6 " .	120	. . . . .	145–155	12.0–12.5	0.5
No. 11, 3 " .	196–200	42	320–330	14 0–14.0	. . . . .
No. 12, 4 " .	92	. . . . .	. . . . .	7.8– 9 0	1.2
No. 13	140–149	. . . . .	190–220	6.5– 8.0	1.5
No. 14, 6 weeks .	127	27½	. . . . .	9 3–11.5	2.2
No. 15	110	28	120	3.5	Refused.
No. 16, 10 weeks .	134	. . . . .	. . . . .	11.5–11.5	. . . . .
No. 17, 8 " .	211	. . . . .	. . . . .	7.5–12.0	4.5
No. 18, 7 " .	126–132	29½	115–130	6.5–13.0	6.5
No. 19, 2 " .	170–171	. . . . .	295–315	10.0–10.0	. . . . .
No. 20, 9 " .	165–168	. . . . .	275–279	9.3–12.0	2.9

The cases presented represent markedly deflected septa, or enchondroses, simple turbinate hypertrophies, or polypi, not being included (in which latter condition the percentage gain is much greater than in the present compilation). It has been the intention to tabulate an average run of patients referred for operation. It may be interesting to take up one or two cases as examples. For instance, No. 5 presents the following history: Girl, aged 18, with nearly complete stenosis on both sides, a mouth breather and profoundly anæmic. Her family physician has considered her trouble to consist of consolidation of both apices of the lungs. In thirteen weeks after freeing the nostrils her entire condition was transformed, her chest having expanded 2 inches, and the sallow complexion giving way to the ruddy hue of health. No. 14 I include as one of the few instances in which I have found a normal blood state with a deflection of the septum narium. The case, however, is that of an athlete whose time is mostly spent in the open air. No. 9 is of interest because of his pronounced anæmia and from the fact that he possessed a hæmorrhagic diathesis, it having been necessary to ligate his extremities to stop the bleeding after operation. This is the only case among those tabulated in which any treatment was combined in order to overcome the impoverished condition of the blood.

By observing very many cases I have come to the conclusion that the increase of oxyhæmoglobin in the blood after operations on the septum is directly proportional to the relief afforded an impeded nasal respiration. This increase is constant and averages about 2 per cent. in the six weeks following operations in which the stenosis does not amount to more than 50 per cent., that is to say in cases where the nose is doing but half its work.

If the amount of oxyhæmoglobin is directly proportional to the number of red blood corpuscles, this increase may be expressed by an increase of 100,000 corpuscles to the cubic millimetre.

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[1] Archives of Otology, Vol. xvii, No. 4.

[2] "Headaches," by Allan McLane Hamilton.

Cases should not be operated upon whose blood shows, by spectrum analysis, lower than 6 per cent. of oxyhæmoglobin. In four cases of alarming hæmorrhage this state was always observed. As reference to the table makes other matters I have touched upon apparent, I will postpone the further consideration of the subject for another occasion.

A CASE OF SCLEROSING MASTOIDITIS OCCURRING SUBSEQUENTLY TO PURULENT MASTOIDITIS INTERNA—OPENING OF MASTOID—EXPOSURE OF DURA MATER—RECOVERY.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, Newport, R. I., June 25, 1889.

BY J. A. LIPPINCOTT, M.D.,
OF PITTSBURG, PA.

Sclerosing or eburnating mastoiditis is a disease characterized chiefly by pain, continuous, grinding pain—pain so remorseless and incessant as to stamp upon the features a peculiar expression, appealing, yet hopeless, like that on the face of the Beatrice di Cenci. The pain centres in the mastoid, but radiates over the whole side of the head. I have seen the pain of mastoiditis eburnans closely simulated by the reflex pain of a diseased tooth; and in suspected cases an examination of the teeth ought to be made by a competent dentist.

The affection is comparatively rare in this country—at least not many cases have been reported in the journals. My own experience is limited to two cases, the first of which was reported at the meeting of the American Otological Society in July, 1884, and was that of a young lady who, after twelve months of treatment, local and constitutional, and of the most varied character, was finally operated upon, the mastoid being opened with a drill down to the antrum. Complete relief followed the operation, but unhappily lasted only a year. A second and more complete operation has been since suggested, but the patient is not yet ready to give her assent.

The following case, apart from the rarity of the disease, seems worthy of record on several grounds,—the origin of the trouble, its obstinacy, the opening into the cranial cavity, and the final result.

Miss F. M., æt. 24, had in childhood had frequent attacks of earache on the left side but never otorrhœa. These attacks gradually ceased, but she continued to suffer frequently from quinsy. In Sept., 1885, while pursuing her occupation—dentistry—in St. Paul, Minn., she had what she describes as a peculiar attack of sore throat, affecting the left side, which presently disappeared, leaving a severe continuous aching in the mastoid region. Leeching and other local and constitutional treatment proving ineffectual, Dr. Fulton[1] opened the mastoid and found a large abscess which he carefully washed out. The result was quite satisfactory, the wound soon healing, and the pain being relieved entirely. Six months later, in April, 1886, the earache returned, and from that time until I saw her in the following July, continued to increase in severity. When she consulted me I found the following condition: A vertical, linear, depressed cicatrix behind the ear. Above the scar, slight swelling, rather tender to touch. External auditory canal normal. Mt. slightly shrunken, lustreless, and dusky in color. No light-cone. Watch of forty inches hearing-distance heard on contact. Voice at ten inches. Air conduction better than bone conduction. Eustachian tubes pervious. Politzer bag causes transient distress in left ear. Throat and nares healthy looking. Right ear normal in appearance and function. The pain in the left mastoid was almost constant, but was subject to exacerbations.

In view of the fact that an operation had already been performed, and by so accomplished an operator as Dr. Fulton, I naturally hesitated to subject the young lady to further operative procedure. I must remark, parenthetically, that at this time I was not aware of the previous suppurative character of the case, as Dr. Fulton's report of it had not yet been published. I made the diagnosis of sclerosis, and I supposed the disease to have been sclerotic *ab initio*. I suggested to her family physician, Dr. E. S. Riggs, of Allegheny, that the treatment which he had already instituted be continued. Accordingly, for three months an energetic course of tonics and alteratives was maintained, and various applications, revulsive, and emollient, were made to the painful region.

During this period, instead of diminishing, the pain steadily increased in intensity, necessitating the frequent administration of anodynes. In the latter part of October, at the urgent solicitation of the patient, and with the aid of Dr. Riggs and the resident staff of the Allegheny General Hospital, I made with drills and chisels a pretty large opening about five-eighths of an inch deep in the mastoid process. The bony tissue was dense and firm, the cellular structure having almost completely disappeared. There was some hyperæmia especially of the deeper parts.

This opening was maintained and poultices applied, for nearly two months. I shall not weary you with details. Suffice it to say that the operation accomplished nothing. The patient's sufferings continued to increase, being but slightly mitigated by the large and frequent hypodermatic injections of morphia administered. Weary, sleepless nights succeeded days of monotonous pain. Convulsions set in. Appetite failed, and emaciation and debility became more and more marked. The face assumed a haggard, almost despairing expression, and the *morale* of the patient became so weakened that the worst was dreaded. Examination of the urine, as well as of the eyegrounds at this time proved negative.

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[1] This case was without doubt one of those reported in the interesting article by Dr. Fulton in the Proceedings of the 9th International Congress.

Seven months after the last operation, viz: toward the end of May, 1887, I was surprised by a visit from Miss M., who drove to my office for the purpose of insisting on one more attempt being made. She said she could no longer endure the slow agony, and would prefer to die on the operating table. On consultation with Dr. Riggs, in whose judgment I had very great confidence, it was decided to accede to the patient's wishes. She was therefore again etherized May 25th, 1887; and, the soft tissues, having been well reflected, the mastoid was reopened. My object now was to make as thorough an excavation as I dared. For this purpose a large and deep opening was made as before with drills and chisels; and then the cavity was slowly and cautiously enlarged by means of the conical drill, until the end of my thumb could enter and move freely in the interior. The thickness of the process proved less at one point than I had anticipated, and, on withdrawing the trephine, I found that I had exposed the dura mater. The opening was fully one-fourth of an inch in diameter, and was at the anterior part of the bottom of the wound.

Circumstances prevented my seeing the patient for some time, and the subsequent treatment was conducted by Dr. Riggs, but I learned later that on the termination of the anæsthesia, the pain had entirely disappeared. Convalescence was speedy and uneventful. The wound was kept open for about six weeks, and then allowed to cicatrize. Dr. R. informed me that, the day after the operation, he punctured the dura mater where it bulged into the wound with a hypodermatic needle, and drew off a small quantity of clear fluid.

In Febuary, 1888, Miss R. came to inform me of her progress. She had resumed work in August, two months after the operation, and, with the exception of a very slight earache from cold, in October, she had been absolutely free from pain. She was enjoying excellent health, and her appearance was bright and cheerful. A deep furrow was to be seen in the mastoid process. The membrana tympani looked just as it did at the first examination, and the hearing was also unchanged. A final examination made a few days ago, revealed the same happy exemption of pain, and practically the same local appearances. Moreover, the patient states that she feels that she is entirely cured, since attacks of cold never affect the ear now as formerly.

If it is permissible at all to generalize from my limited experience, it seems to point clearly to two conclusions: first, that no treatment which does not include operative interference is of the slightest avail in the affection under consideration, and secondly, that no operation, which does not involve a pretty complete removal of the internal structure of the mastoid, will be apt to prove permanently beneficial. In the first case a partial operation gave relief for a year. In the second, without reference to the history of the case before coming under my care, one partial operation gave no relief at all; while a second, which left very little of the mastoid remaining except the shell, has conferred absolute immunity from pain, which has continued now for two years, and bids fair to be permanent.

The difference between opening a mastoid for sclerosing mastoiditis and the ordinary operation of perforating this structure for suppurative mastoiditis interna is so great that it can with difficulty be appreciated by one who has not operated on both classes of cases. In trephining for purulent inflammation a few turns of the drill, or a few blows on the chisel, and you have forced your way through a comparatively thin wall, and your instrument finds itself either in a cavity, or among the loose and friable material of the mastoid cells. Besides, you are generally rewarded by the appearance or escape of pus. But, in operating on a sclerosed mastoid, penetration is effected slowly and laboriously on account of the ivory-like density of the bone. Moreover, it is sometimes extremely difficult or impossible to find a cavity at all, no matter at what depth, because the cavity of the antrum, in an old case, is apt to be so encroached upon by the eburnating process as to be almost obliterated. Furthermore, you do not find pus—you do not expect to find it. You simply make what you suppose to be a sufficiently large and deep opening, and then you stop, trusting that the result may be good.

I can not close this paper without expressing my sense of the value of an instrument which I have heard "damned with faint praise." I refer to the conical drill. It seems to me that, in case of penetration into the cranial cavity—and this accident, in operating for sclerosing mastoiditis, it is by no means unprecedented—less harm is likely to be done to the intracranial tissues with an instrument like this, which does its work slowly and steadily, than with a chisel, which may plunge abruptly, in spite of the greatest skill and care, into the lateral sinus. On account of its tapering and rounded form a sudden plunge is impossible, since, even if the apex has made an opening, the body of the instrument is prevented from entering. Besides, from the absence of any sharp, cutting edge, the contents of the cranial cavity are almost secure from laceration or serious injury.

A NEW DOUBLE CATHETER FOR UTERINE INJECTION.

Read in the Section of Obstetrics and Diseases of Women, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY A. CORDES, M.D.,
ADJUNCT TO THE MATERNITÉ OF GENEVA, (SWITZERLAND); CONSULTING PHYSICIAN TO THE MISÉRICORDE, ETC.

In our days of asepticism every instrument, or part of instrument, must be thoroughly scrubbed in every corner where the microbes take their abode. Following this principle, I had made in Paris a vesical catheter, made of two pieces, one sliding into the other, so as to be separable in two corresponding grooves, and being very easily cleansed with the brush. Of course the blind end, near the eyes, is filled up to the level of the eyes, with metal, so as to leave no corner or uneven space, or cul-de-sac to lodge the dreaded microbes.

That was all right, as long as the vesical catheter alone was concerned, in which the fluid supports no pressure, and which is short. But when I tried to apply this contrivance to the long sound for uterine irrigation in which the antiseptic fluid is forced with some power, I found no maker could make it tight enough; a large quantity of the fluid ran out, along the sides of the grooves. If it was nearly tight then the slide would not run easily in the groove. Moreover it would have been a difficulty almost insuperable for our makers to give to the instrument the sigmoid curve which is so invaluable, for the sliding part would not follow that double curve. Then it occured to my mind that if, instead of having a tube for the access of the fluid in the uterus, (this tube being constituted by the two grooves, as in the vesical sound) and a groove for the return of the liquid with débris, as in Bubin's sound, I could have two open grooves, and the instrument would be very easy to cleanse with a common nail brush.

These grooves in my instrument are converted into tubes by the introduction of the sound in a sheath of soft rubber, which adheres enough to the sides of the grooves to make the instrument sufficiently water tight. I was surprised to see how easy the return of the fluid and débris was rendered.

Up to this date, April the 21st, the instrument has been made of nickled metal by Collin, in Paris. But I hope to succeed in having it made of hard rubber which is not corroded by the bichloride of mercury solution, or any liquid. It has also to be made with the sigmoid flexure of Bozeman double catheter, which makes its introduction easier in some cases.

Some criticism of the double current sounds now in use may be proper. In the modification of Bozeman's double catheter, presented by Dr. Howard A. Kelley at the Obstetrical Society of Philadelphia, Pa., March the 1st 1888, the screws, nuts, etc., are not easy to cleanse. Any tube, especially a small one, is not easily kept clean. I know this instrument only by the figure given in the *Am. Jour. Obstetrics.* The internal tube of the Fritsch, which I found used at the Maternité, does not admit the brush. Besides, the openings, or the eyes being on the sides, the fluid flows out laterally, not coming in proper contact with the fundus uteri. In Budin's "horse-shoe" tube the exit of the fluid is well provided for, the injecting tube being semi-lunar, which makes disinfection, however, next to impossible, except by passing the instrument through the flame, rendering it necessary for it to be made of metal.

Doléris' dilating sound is perfect for what concerns the irrigation; the egress of the fluid is effected between the two tubes, which are separable like the tongs used for wood fire. But to clean such an instrument, and make it aseptic (except with the flame) is an impossibility. See Fig. 1., especially the shape of the tube ᗡD, two capital D's opposed to each other. No brush could follow the curves and penetrate the angles or curves of the tubes. Moreover, the blind end of the tubes from the openings down to the distal end is a pocket, in which the brush cannot penetrate, a very nice abode for microbes.

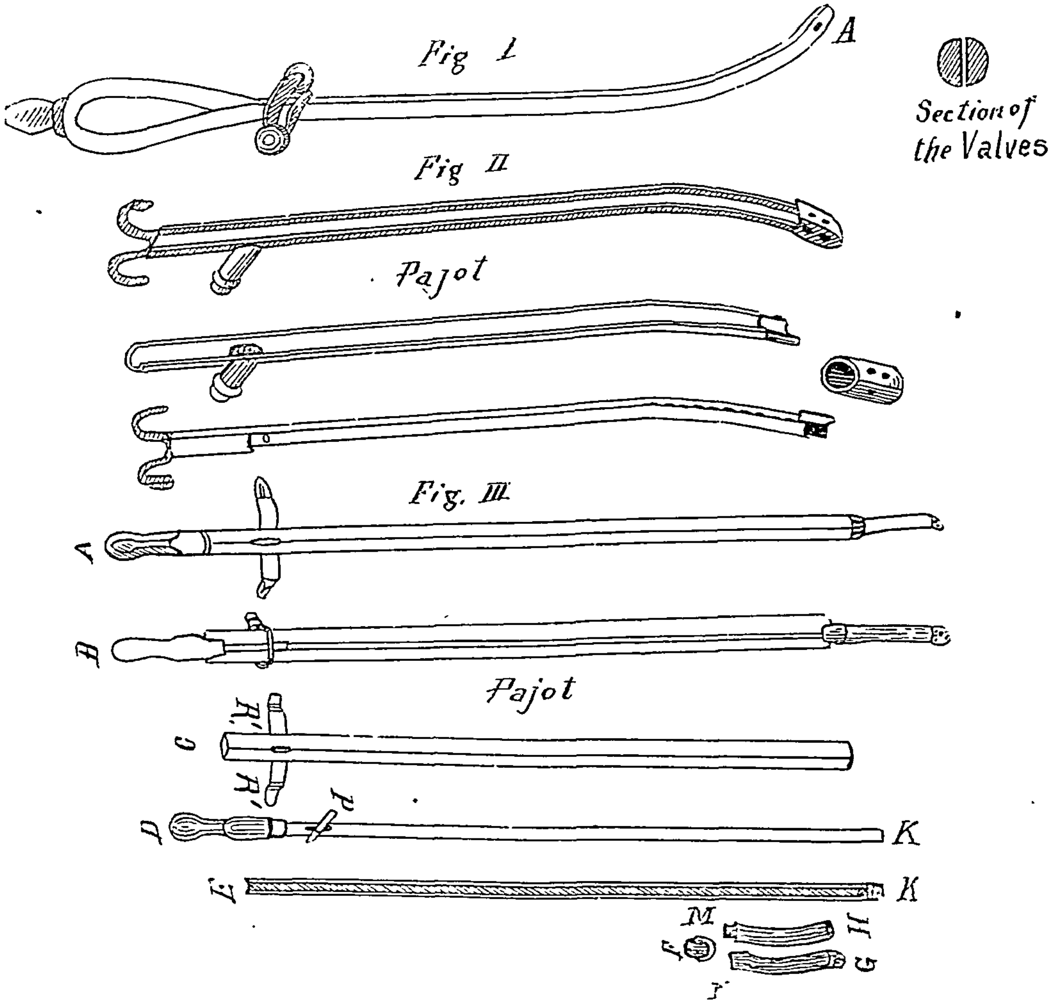
Pajot made two sounds; one (Fig. 2) is easy to clean, but, I believe, (having no actual experience of it) that it is difficult to make it work tight. The same inconvenience I met in my Erich. The second (Fig. 3) is too complicated to be possibly kept aseptic; all the time, hinges, screws, nuts, constantly get out of order, and are difficult to keep really clean. It cannot be made of hard rubber, consequently it cannot be kept in a mercurial solution.

Dr. A. Reverdier, of Geneva, contrived another instrument (Fig. 4) not unlike a pair of scissors. One blade is an open channel, or large groove, for the return of the fluid or débris. The other blade is a tube perforated at the distal end, with holes for the projection of the fluid into the womb. At the proximal end of the tube is fastened a lateral tube for the India rubber tubing or the canula of the syringe. One great improvement would be to have this lateral tube in the axis of the tube, not in the side, so as to make possible the use of the brush inwardly. Another improvement would be to make the distal end movable for the ramrod (or brush) to go all along the tube. Every cul-de-sac is almost impossible to keep clean. This improvement exists in A. Oliver's sound.

A. Oliver's tube is a hollow catheter, where the walls are impressed with four grooves for the return of the fluid injected. As the diagram shows, the tube presents four angles open internally, which, notwithstanding the use of the brush, may keep some little débris. It is made of hard rubber, and possesses the sigmoid [S] shape of Bozeman's catheter. The distal end is screwed on the instrument, and is movable, thus facilitating the cleaning. But the screws are not easily kept perfectly clean and aseptic. . . . I would suggest the suppression of the stop cock, a favorite place for microbes. The eyelets also may keep some bits of tissue.

My instrument has no rigid tube, no screw, no nuts, no blind end, (or cul-de-sac), no angle, no corners, where the microbes could hide, defeating the brush, and no eyelets. Being open at the distal end, it throws the fluid on the fundus uteri whence it comes down, and returns by the exit channel. I suppose, as is customary with us, the patient lies on her back. It might be made of glass, but I prefer hard rubber as being slightly flexible, and not so easily broken. Then to "give Cæsar what belongs to Cæsar," I am bound to say the idea of two grooves (there could be four, as in Oliver's sound, one for ingress of the fluid, three for the egress, but I prefer two only as being larger, *ceteris paribus*) came to my mind in looking at a "horse-shoe" catheter, originated by my friend Budin of Paris.

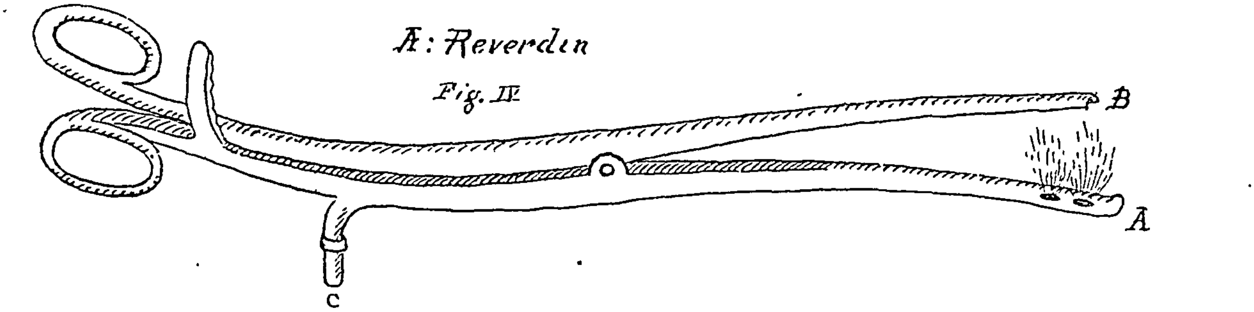
Now a little criticism of my own contrivance. The rubber sheath—which is made to go a little beyond the proximal end of the sound, for admitting the nozzle of the syringe—is the weak point of it. Soft rubber does not wear well. But being very cheap, (12 inches of rubber tubing is not very dear), it can be, if it seems advisable, changed every day, or one can let it stand in a strong solution of an antiseptic fluid, of course, after having taken the hard rubber part out of the soft rubber covering. I would not rely on a



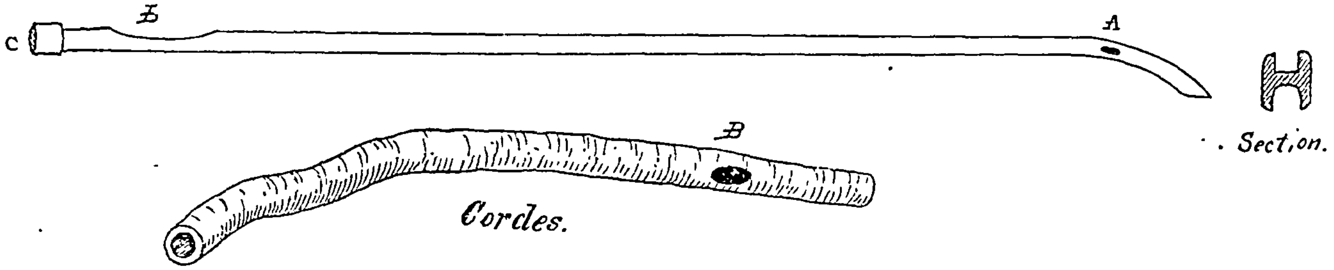
A, instrument ready for use. B, open for dilatation. C, dilator of cervix; two valves united by a double hinge. E, one of the valves. D, internal valve (injector). F, nut, screwing on K on one side, and on M and N on the other side. F is furrowed longitudinally. G H, two grooves held in contact by F. The extremity G is perforated with holes. P turned perpendicularly keeps the valves distended. R' R'. levers for separating the valves, kept joined by a spring.

cleaning with the brush, the sound being still in the tube. I will try to improve that. If one says the grooves (being closed channels when the rubber covers them) will get blocked by débris, I will answer, the smaller the débris the more dangerous it is; if it gets in the sound it will be extracted, and I would not be afraid of a slight distension of the uterus which washes it better. Budin's experiments proved that, when the liquid distends the uterus slightly, the washing is more thoroughly made, and will promote contraction in it. Contraction closes the absorbing vessels, keeps the door shut to the infection, and detaches adherent bits of placenta. The whole instrument must be taken out and cleaned by forcing water from one of the ends, which are all open, and in which the nozzle of the syringe can be inserted.

The rubber covering can be as thin as one may wish, and I never experienced any difficulty in passing the sound, properly smeared with vaseline, glycerine, etc., in a uterus admitting a catheter of the same size. My sound slips into the uterus as easily as one of any other material.



B, groove open inwardly. A, tube, water flowing from the eyelets; observe the duration of the flow. C, piece for rubber tubing or syringe.



b, exit of the liquid after irrigation. B, hole in the rubber tube corresponding to b when the instrument is ready for introduction. The eye A may be covered or uncovered by the tube at will. The rubber tube goes up to C, for admitting the syringe.

THE CLINIC.

THE TREATMENT OF FRACTURES BY MEANS OF THE PLASTER OF PARIS DRESSING.

A Clinical Lecture delivered to the Third Year Class at the Medico-Chirurgical College, Philadelphia.

BY D. BENJAMIN, M.D.,
LECTURER ON FRACTURES AND DISLOCATIONS; SURGEON TO COOPER HOSPITAL, ETC.

[Reported for THE JOURNAL.]

Gentlemen:—I have been using plaster of Paris extensively for some twelve years, in the treatment of fractures, and it is undoubtedly the best, as well as the cheapest, dressing for most cases; notwithstanding the apparent simplicity of this dressing, it requires great care in its management in order to secure success.

I have found no dressing so satisfactory as the plaster, or silicate, for the treatment of broken bones in infants. I have recently treated two cases of broken femurs in very young children, aged respectively three weeks and eight months, and after trying various splints and apparatus, resorted to the plaster bandage, which gave great satisfaction; and as I have not known of this dressing having been especially recommended in very young children, I would call especial attention to the efficacy of this treatment.

The plaster bandage should be applied in broken femur from the middle of the foot to the hip, and a spica of the hip carried as high as the navel; care should be taken that the bandage be thick and strong at the bridge which connects the parts which surround the hip with that which encloses the thigh. The leg should be flexed at the knee and at the hip to an angle of about 40° respectively while the bandage is being applied. It is well to continue the ether for fifteen or twenty minutes, while the plaster is setting. I generally use chloroform in children, and the child should be allowed to sleep, as they usually will, without awakening after the chloroform has been withdrawn, naturally and quietly for a considerable time after the influence of the anæsthetic has passed off. The child should lie on its back, with its leg lying on a small pillow. The child will be comfortable; you will have no more trouble with it; and when you remove the dressing, in seven weeks, the case is well, much better than the long splints that you see depicted in some of the books. The principal difficulties met with in the use of the plaster dressing are: *First*, to get good fresh calcined plaster; *Second*, keeping the rolls in stock without deteriorating; *Third*, preventing the plaster setting to a deformity, should the bones, as they are sometimes prone to do, become displaced while the plaster is getting hard; *Fourth*, getting the bandage off when the fracture is well, or for examination; *Fifth*, the limb getting rapidly too small for the cast; *Sixth*, the time and trouble to get the plaster properly spread on the crinoline and rolled.

I shall now attempt to describe how these difficulties may be best overcome, and will also describe and show you an apparatus which I have devised for the easy preparation of plaster of Paris bandages, as well as the ordinary rolls.

1. The difficulty in getting good calcined plaster is caused principally by the fact that it rapidly absorbs moisture from the atmosphere unless it be very carefully kept excluded from the air. It is best, before buying, to test the sample; good calcined plaster has a smooth, fine feeling when rubbed between the fingers; after it has become partially hydrated by exposure it will be lumpy and feel coarse. A little should be mixed with water and tested as to its setting qualities. Having procured a good article it may be kept for years without deterioration, in air-tight jars. About the best jars for this purpose are large specimen jars, with ground-glass covers.

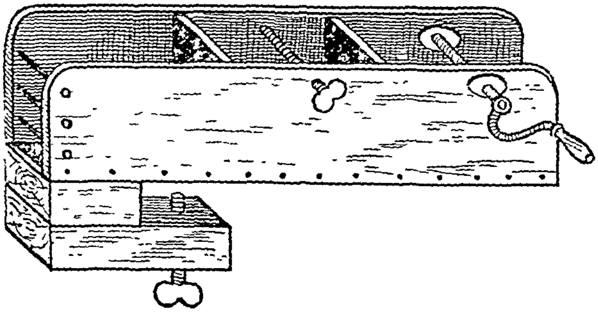
2. Rolls may be kept in stock by keeping them immersed in the jar with the fresh plaster.

3. To prevent the plaster dressing from setting to a deformity when the bones have a tendency to be displaced, a compress may be placed under the flannel bandage, or a piece of binder's board or felt placed over the flannel bandage.

4. By placing a strip of sheet lead an inch and a quarter wide under the plaster bandage, and cutting down upon it before the plaster is quite hard, and then withdrawing the piece of lead by pulling on the end of it, will make it quite easy to spread open and remove the dressing at any time after it has hardened; but it is difficult to cut down through a plaster bandage without causing some disturbance of the relation of the bandage to the limb, or of the bones to each other, and I usually prefer to get along without the use of the lead, and take the more tedious method of cutting through the hardened plaster at the proper time.

5. Cutting through the plaster may be facilitated by applying nitric or hydrochloric acid along the line of the intended incision; but unless neutralized by ammonia it will attack the edge of your steel cutting instruments. To prevent the limb getting rapidly too small for the cast, the plaster of Paris bandages used as splints for broken bones, as a general rule, should not be applied until after the swelling, œdema or effusions, bruisings or enlargements, have to a great extent disappeared, say from a week to ten days after the injury has been received, depending, of course, to some extent upon the amount of the swelling and the rapidity of its disappearance. Previously to the applying of the plaster of Paris dressing, temporary dressings and splints should be applied and proper antiphlogistic treatment instituted to reduce the primary inflammation. At any time after the plaster of Paris has been applied, should the limb—as it often will by atrophy—become too small for the cast, a piece should be cut out of the cast from a half inch to an inch wide through its entire length, and bandages and straps applied around the plaster cast sufficiently tight to draw it up to the limb.

6. To overcome the trouble and time which it takes usually to get the plaster properly rubbed into the crinoline, and rolled by hand, I have devised the instrument which I now show you, and will explain to you the proper method of its use. Any instrument maker, or any student with sufficient mechanical ability or dexterity to be a successful surgeon, can make one.



This machine does not cost more than any ordinary bandage roller, and will roll all ordinary bandages with the greatest ease and facility, and moreover is so constructed as not to be liable to break or get out of order. When you roll a plaster of Paris bandage you give the screw in the side one or two turns back sufficiently to loosen the partition. Having your crinoline bandages cut the proper width, you pass one end under the partition next to the crank, then fill the middle box full of plaster of Paris both under and above the crinoline, first having pressed the partition down to the crinoline tightly, then raising it about the sixteenth of an inch. By the heighth of this partition you regulate the thickness of the plaster on the crinoline. Catch the end of the bandage on the shaft and turn the crank backwards. As the crinoline winds, the plaster is carried along sufficiently thick and sufficiently rubbed in to make an excellent plaster bandage roller. The roller may be wound tightly by pulling on the distant end of the bandage, or it may be wound loosely by allowing it to flow easily through the plaster. They should not be wound tightly, as it takes too long to soak them afterward, at the time of their application; neither should the plaster of Paris roller bandage be longer than four or five yards, as it would make them too bulky.

You can readily see that the plaster of Paris roller bandages can be made as rapidly, as pleasantly, as cleanly, and as efficiently on this machine as a plain roller bandage.

Having determined to apply a plaster of Paris dressing, you first bathe the limb with alcohol or whisky, rub it with a dry towel, then apply smoothly a flannel bandage first. While doing so have your plaster of Paris rollers steeping, end upwards, in warm water sufficiently deep to cover them, and containing a tablespoonful of table salt to a pint of water. Having squeezed out the surplus water after the entire plaster roller has been permeated, and having carefully ascertained that the broken bones are in their proper position, you apply smoothly and rapidly, occasionally rubbing.

The greatest advantage of the plaster of Paris dressing is that you can get your patient with a broken leg out of bed and out of doors, a very great advantage, one which is of the utmost importance to business men, as it enables them to get to their office, or have an oversight of their business, at least, which sometimes is worth thousands of dollars to them, besides the great improvement of general health.

The dressing can usually be left on six weeks.

MEDIAL PROGRESS.

SALICYLIC ACID IN DIPHTHERIA.—M. D'ESPINE, of Geneva, agrees with Roux and Yersin, of Pasteur's laboratory, regarding the specific character of the bacillus discovered by Loeffler. He believes that the bacillus does not enter the circulation and that it only produces intoxication of the organism by the formation of products which are afterwards absorbed. D'Espine has studied the destructive action of the various parasiticide remedies used in diphtheria as affecting the microörganism. Benzoate of sodium (5 or 10 parts in 100), chlorate of potassium (5 parts in 100), boric acid (4 parts in 100), —— of sulphur (sulphuret of sodium) (from 2½ to 5 parts per 100) left in contact with the bacillus for five minutes has failed to arrest its development. Under similar conditions it has been arrested however, by sublimate (1–8000), by phenic acid (2–100), by salicylic acid (1–2000), by chloral (1–100), by permanganate of potassium (1–2000), etc. These results have induced the reporter to employ salicylic acid in the local treatment of diphtheria, for the reason that it is distinguished among the other remedies experimented upon by reason of its feeble toxic properties. The plan which has given the best results in the hands of the reporter consists in irrigations repeated every hour or two through the mouth or nasal fossæ with a solution of salicylic acid of the strength of 1½ to 2 parts per thousand, which in the case of very young children may be reduced to 1–100 or 1–500. These irrigations may be given by the mouth with an irrigator and by the nose; in the latter case one or two tablespoonfuls of the solution are poured into each nostril after Rigauer's method. One or two litres of the solution may be used during the first twenty-four hours. In older children gargling may take the place of irrigation. When the false membranes are extensive and especially when they are thick, it becomes necessary to apply the solution also with a brush, with a view to softening and breaking them up. For this purpose the author also employs lemon juice, which in his experience has shown a decidedly destructive influence upon the bacillus of Loeffler.—*Gaz. Méd. de L'Algerie.*

CHANGES IN THE CHARACTER OF NASAL MYXOMATA.—At the recent meeting of the International Laryngological Congress, in Paris, M. SCHIFFERS called attention to the transformation of benign into malignant tumors. Such a transformation was long considered doubtful and it is still so in the case of myxomata of the nasal fossæ, properly so called. M. Schiffers presented a series of microscopical preparations obtained from tumors affecting two individuals where the transformation of the myxomata is clearly evident. In one the tumor had become epitheliomatous, in the other it was rather a neoplasm of intermediate nature. One should be on his guard against the possibility of such a transformation when a unilateral nasal obstruction, due to a neoplasm, is obstructed in a subject over fifty years of age. The indication is to operate as soon and as completely as possible with the scalpel or the galvanic knife, and follow the operation with strong antiseptic irrigations to prevent possible autoinfection.—*Le Bulletin Médical.*

ELECTRICITY IN THE TREATMENT OF INTESTINAL OCCLUSION.—HÉRARD reports twenty-four cases of intestinal occlusion treated by electricity. The method consists in first administering a salt solution and then passing a current of electricity. Faradic or galvanic Faradism is indicated in cases of sudden occurrence, galvanism in the cases of slower development. Hérard concludes from his experience that electrical treatment in such cases should always be tried before resorting to laparotomy.—*La Province Méd.*

TREPHINING THE ILIUM.—M. TERRILLON, in *La Semaine Médical*, says that trephining the ilium has long been practiced, Ollier, among others, having advised its employment in a number of cases. The first patient upon whom I performed the operation was a girl of 18, who consulted me on account of a fistula opening near the left anterior superior iliac crest and connecting with a large abscess of the iliac fossa. All methods of treatment hitherto employed had failed. There was an abundant discharge, and the general condition of the patient was bad. An extensive incision above the crest of the ilium enabled me to reach a great cavity situated between the iliac fossa and the thickened peritoneum. The cavity extended as far as the upper part of the true pelvis, and the finger could with difficulty reach its limits. Its walls were covered with thick, reddish fungosities; these were scraped off, and for greater safety a counter opening was made in front of the Fallopian arch. The aspect of affairs at first improved, but gradually the former conditions returned, except that the patient's general health was better than it had been. The difficulty seemed to be like that encountered in empyema,—to make a rigid osseous wall approach a movable one. The following operation was accordingly performed: An incision was made along the crest of the ilium as in the former operation, to enable the operator to explore the cavity and to serve as a guide; an incision 5 or 6 centimetres long was then made above the trochanter, the incision extending backward and going as deep as the bone; the lips of the wound were then turned back above and behind the cotyloid cavity and below the sciatic spine. The periosteum was then carefully removed and the ilium perforated below the superior strait, a finger introduced within the pelvic basin serving as a guide. The cavity was then cleansed and a large drainage tube introduced. Improvement took place rapidly, and the patient was completely cured in four or five months.

In 1888 I had occasion to perform a similar operation upon a man 22 years old, who presented all the symptoms of a psoas abscess with retraction of the thigh upon the pelvic basin. The case was one of several months' standing, and no method of treatment had been successful. An incision was made along the crest of the ilium, by the aid of which I found deep down a portion of denuded bone and a great collection of pus by the side of the psoas. An incision was made and the bone trephined behind the cotyloid cavity; adequate drainage was established and a rapid cure was obtained.

TREATMENT OF ACUTE BLENORRHŒA.—At the outset the abortive treatment with nitrate of silver should be employed. This should be injected by means of a syringe with a backward stream. Care should be taken to constrict the penis to prevent the fluid from being forced too far.

When the discharge is well established one of the following injections should be used:

1.	Lime water	50 grams.
	Distilled water	150 "
2.	Sublimate	3 centigr.
	Distilled water	150 grams.
3.	Salicylate of mercury	6 centigr.
	Bicarb. soda	1 gram.
	Distilled water	150 grams.
4.	Resorcin	3 grams.
	Distilled water	150 "
5.	Creoline	1.5 gram.
	Distilled water	150 "
6.	Pyridine (the most efficacious)	50 centigr.
	Distilled water	150 grams.

These injections should be repeated after each micturition and when possible every two hours. To render them most active they should be given hot (104°).

After the entire disappearance of pain and the subsidence of the discharge the balsamic preparations should be employed:

℞.	Freshly powdered cubebs	80 grams.
	Copaiba	50 "
	Essence of peppermint	a few drops.

Dose. A mass as large as a small nutmeg, to be taken in a wafer before meals.

If a cure is not obtained in a fortnight the preparations should be varied, and with a view to render them as efficacious as possible a choice should be made of one of the following formulæ:

1.	Distilled water	150 grams.
	Subnitrate of bismuth	5–10 "
2.	Liquid vaseline	150 grams.
	Salicylate of bismuth	5–10 "
	Sulphate of quinia	1 "
	Gum	10 "
	Glycerine	30 "
	Rose water	120 "
3.	Liquid vaseline	150 grams.
	Salicylate of bismuth	5–10 "
	Resorcin	3 "
	Iodol	1 "

These last injections should be made night and morning.

The two following injections are also useful:

1.	Sulphate of zinc	20–50 centigr.
	" " copper	
	" " iron	
	Distilled water	150 grams.
2.	Citric acid	90 centigr.
	Salicylic acid	3 "
	Distilled water	150 grams.

Finally, in those cases where it becomes necessary to apply treatment to the bulbar and retro-bulbar regions which afford a last refuge to the gonococcus, we may resort to various solutions, especially one of nitrate of silver in the proportion of 1 to 50.—L. JULLIEN, *Gaz. Méd. de Liége.*

TREATMENT OF DYSPEPSIA.—There are certain ptomaines which are formed in the stomach as the result of the fermentation of foods. The therapeutical indication in such cases is to prevent such fermentation and to destroy the toxic substances formed. This may be accomplished by means of water charged with chloroform and antiseptics, and by the preparations of naphthol and salicylate of bismuth according to the formulæ of Bouchard:

℞. Naphthol B. . . . . 7.5 grams.
Bismuth salicylatis . . . . . . 15 "
For 30 cachets. One cachet after each meal.

℞. Naphthol B. . . . .
Bismuthi salicylatis. . . . . . .
Magnesiæ. . . . . āā 5 grams.
For 20 cachets. One cachet at the commencement of each meal.

R. Bismuthi salicylatis. . . . . .
Magnesiæ salicylatis . . . . .
Sodii benzoatis. . . . . āā 5 grams.
For 20 cachets. One cachet at the commencement of each meal.

—*Rev. Gér de Thér.*

TREATMENT OF DISPLACEMENTS AND DEVIATIONS OF THE UTERUS BY ALEXANDER'S OPERATION.—PROF. SCHWARTZ, of Paris, reports in detail ten cases of uterine displacement treated by Alexander's operation. The results upon the whole were very satisfactory, and the reporter concludes that the operation is useful in all cases of deviation of the uterus which are reducible or reduced and easy to maintain; also in cases of simple prolapse of the first degree, provided the uterus is easily replaced; it is well in these latter cases to combine also an operation which will narrow the vagina and vulva, especially where laceration has taken place. To obtain good results it is not only necessary that the conditions above mentioned shall be fulfilled, but also that the uterus be not too greatly increased in volume and weight. The Alexander operation is entirely devoid of danger, a fact which especially recommends it in all cases where it is indicated.

When, on the other hand, there is retroversion with adhesion and there is difficulty in the restoring and maintaining the uterus in its proper position, and when, too, there are signs present which indicate disease of the pelvis or the uterine appendages, laparotomy with ventrofixation will be indicated. The same procedure will be indicated in cases of a return of the prolapse after operations on the uterus, vagina, vulva and perineum, such as is observed in cases of hypertrophy with intractable augmentation of volume and weight on the part of the uterus.—*Rev. de Chir.*

A NEW METHOD OF ADMINISTERING COD LIVER OIL.—GUBB, of London, is authority for the statement that the disagreeable taste of cod liver oil may be made to disappear entirely by mixing the oil with extract of malt which has been prepared *in vacuo*. Attention is directed in this connection to a remarkable phenomenon: the aqueous extract of malt placed in contact with cod liver oil dissolves it. This solution is perfectly clear and transparent and shows no fat globules under the microscope. In this manner, strange as it may seem, a true solution is produced. To displace the oil it is only necessary to place a drop of water on the surface, when immediately small drops of oil appear. In this manner the oil which was in solution becomes an emulsion, but this emulsion is more perfect than that of butter in milk. Only extracts of malt which are rich in diastase possess this property. Invalids and especially children enjoy the emulsion, and far from disturbing digestion as the raw oil too often does, the malt improves it.—*L'Union Médicale.*

PYÆMIA AFTER ABORTION.—The etiology of puerperal fever, says V. BABES (*Cent. für Chir.*), has been studied by many authors; the pyogenic streptococci are the ones most frequently found, while now and then a few saprositic bacilli are met with. Babes had opportunity to examine two women who died of pyæmia following abortion, and found in the multiple abscesses phlegmous and thrombi the staphylococcus pyogenes aureus. Supported by these observations he believes that there is an important difference between puerperal infection when the streptococcus are found and infection after abortion when staphylococci are present. The reporter's experience shows that streptococcus infection may occur even in abortion.

ARSENICAL TREATMENT OF LYMPHADENOMA.—An interesting therapeutical question, the treatment of lymphadenoma by means of arsenic, has recently been discussed in the Société de Chirurgie of Paris. In addition to the internal treatment with large doses of arsenic, some prefer to add the interstitial injection of a solution of the drug. The results vary according to the nature of the tumor, the diagnosis of which is not always easy; in the case of benign lymphadenoma they are excellent, but in malignant cases and in tubercular neoplasia they are *nil*. The internal treatment with arsenic, even in doubtful cases, is readily admitted by the majority of surgeons. The interstitial injections in the depth of the tumors excites suppuration, and many prefer the extirpation of the tumors.—*Gaz. Méd. de Paris.*

SOURCES OF INFECTION IN MENINGITIS.—Five forms of bacilli capable of producing meningitis have thus far been identified, viz.: 1. staphylococcus aureus; 2. streptococcus pyogenes; 3. bacillus meningitidis of Neumann and Scheffer; 4. pneumococcus Fränkelii; 5. bacillus meningitidus intracellularis of Weichselbaum and Goldschmidt.—*Correspondenz-Blatt f. Sch. Aerzte.*

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SATURDAY, JANUARY 11, 1890.

THE MICROBE.

The microscopic germ or microbe of to-day, or the old-time entity, has assumed an important rôle in our lives. Of late years a flood of light has been thrown on the subject of germs by the work of M. PASTEUR, his researches in ferments and fermentation, and his extraordinary findings in chicken cholera, charbon and hydrophobia. These have attracted the attention of the medical and lay world, and have been the means of leading to endless investigation in every clime.

To-day, thanks to such researches, upwards of two hundred germs, microbes or bacteria are known, the majority wholly harmless as disease-producers—in a word, most useful in the many physiological processes taking place within our bodies.

While trying to establish the *raison d'etre* of some of these microbes a new one is announced that temporarily promises to be king. The new *bête noire* is influenza, doubtless due to a specific organism wafted through the atmosphere to our circulation. In common with other microbes, "like produces like." This influenza bacillus is an old-time globe trotter. Its antiquity makes it intensely respectable and correspondingly annoying. He hails from the land of the unknown—the East. The Russians attribute it to the Chinese. Certain it is, from St. Petersburg it has spread all over Europe and, instead of continuing a harmless course, seems to have taken on virulence in its travels and now is said to be death-dealing. Doubtless thousands of eyes scientific are watching for the "little stranger."

The conclusion that "like produces like" is an unalterable law in disease and nature. What practitioner would expect a patient with small-pox to cause scarlet fever, or one with the latter to produce puerperal fever in another? What agriculturist planting corn would expect wheat? "Like produces like."

Does vaccine produce scarlet fever or measles? Or has it, through long decades, simply produced the usual effects of vaccination, in all ages and climes? Here a new thought intrudes itself. The result of a successful vaccination is a scab or crust, a scar, and subsequent immunity from small-pox. How many of our readers have paused and attempted to reason out the exact *modus operandi* of vaccine within the system? What does it do in the body? Does the scientist live who in a few happy, well-chosen words can explain that action, or is our reasoning anent it empirical as it is on other equally important questions in disease? What does the cow-pox or humanized vaccine do in our life currents—they that alike distribute nourishment and disease to our tissues, and eliminate effete products? That a successful vaccination exerts a specific influence on the blood, we accept. Do the entities in the vaccinal fluid set up a fermentation within, as evidenced by the often great systemic disturbance, flushed face, rapid pulse and high temperature? Then follows a gradual subsidence of the disturbance, and the irritative effects of the poison pass away. The septicæmia, or whatever you may be pleased to call it, is over, and protection against small-pox becomes an accepted fact. We know that for long years the serum of the vaccine vessicle was not supposed to be particulate; but, thanks to the investigations of DR. LIONEL BEALE, MR. GODLEE and others in England, we now know that it is particulate and full of moving entities. Further, that if vaccine serum be filtered, the fluid that passes through the filter, if used on new-born children, produces no effect, but that if the filtrate be used, the usual characteristic effects follow.

The vast field of bacteriology at present offers some of the grandest problems to faithful workers. Patient investigators should be accorded the largest measure of patience and fair play. The truly vital problems will only reveal themselves to the faithful workers. On our part it must be patience and charity in their crucial and incessant research.

And apropos of inoculations, the press of the country has again referred to the inoculations practiced at Rio de Janeiro, stating that the City Council of that city has been so favorably impressed by their ascertained value as protecting against yellow fever, that $600 a month has been voted for vaccinal establishments. To us, at a distance, it seems that the reasoning of DR. DOMINGOS FREIRE, of Rio de Janeiro, Brazil; DR. L. GIRERD, late of Panama, and DRS. CARLOS FINDLAY and DELGADO, of Havana, is sound and based on the reasoning applied to vaccination. From a case of specific yellow fever blood is taken from the finger and a culture is made. The attenuated culture is used for inoculating. Natural result, a mild yellow fever, or planting corn that they may get corn, to use a homely simile. Dr. L. Girerd, while in that hot-bed of yellow fever, Panama, inoculated himself and produced a mild yellow fever. In December, 1886, the *Canada Medical Record* published a translation of his paper. In Havana, Cuba, Dr. Carlos Findlay repeatedly has inoculated new arrivals, with the happiest results, *i. e.*, subsequent immunity in that hot-bed of yellow fever. Again "like produces like." That the blood of a patient suffering from specific yellow fever must be full of its poison goes without saying. In attenuating it, by cultures made *a la* Pasteur, the gentlemen named have worked on accepted lines. They are well-known writers and investigators, as native and foreign medical literature testifies. They have fixed on certain germs or microbes which, from their constancy in their cultures, they believe to be the specific germ. Many years ago, during a limited epidemic of yellow fever at Southampton, England, DR. HASSELL, of that city, detected an unknown germ or entity in the blood of his patients. ZIEMSSEN refers to it. But be that as it may, from the blood of yellow fever patients the poison of the disease is obtained.

To repeat, time, patience and investigation will clear up the minor details; the great ones seem to be indisputable. That yellow fever is due to an entity or germ all students of yellow fever accept. The year 1890 should show great strides in bacteriology and preventive medicine, and the unfolding of many of nature's secrets. Let scientists work, resting assured that time will do justice to all, and that medical science will place her laurels where they belong.

THE EPIDEMIC.

This disease, so sudden in its appearance, so uniform in its symptomatology, and so early pandemic, is commanding universal attention, and will enlist a critical study on the part of the medical profession at large. In the rapidity of its development and world-wide diffusion as compared with other epidemics, its progress is simply phenomenal. So far as we know it is uninfluenced by temperatures, climates, or seasons. It is regardless of geographical limits, and obeys no known laws of transmission.

With reference to its etiology, we have as yet no positive knowledge; rather, we have everything yet to learn. Bacteriological studies have all had their birth since a like epidemic was known, and until now no such opportunities for study were possible. If its methods of propagation are specific they are essentially different from any others, of contagions or of epidemics, with which we are familiar. It would seem most natural to ascribe such world-wide diffusion of the disease to telluric or atmospheric influences. We are at a loss to account for such rapid diffusion in any other way. It would seem, from the great similarity of the cases reported, that a common cause must be responsible for such effects.

It deeply concerns us to know what light, if any, a carefully conducted series of bacteriological studies may be able to throw upon this field, in which at present darkness seems absolute. Happily, the epidemic does not assume the severity of a pestilence, and thus the people will be saved from panic. Its general prevalence in the United States must be conceded, not in the severer form in which it has prevailed in Europe, but it is equally universal, and has its characteristics equally well defined. In some instances the persons affected suffer severely, in others a slight indisposition only ensues. It differs in some respects from former epidemics of its kind. As a rule, the catarrhal symptoms are notably less severe, so much so as in a large number of cases to be nearly or entirely wanting. The nervous symptoms are much more pronounced. Frequently excruciating pains referred to the head, spine, and lower extremities, constitute the essential features of the disease. In the absence of severe bronchial or pulmonary complications the fatality is much less than that which prevailed during former epidemics of the same disease. As we might anticipate, patients are prone to suffer severely from nervous exhaustion, but, so far as our observation extends, we fail to note any dangerous or even serious nervous complications.

The remedies that seem best to meet the requirement in this affection are anodynes, antipyretics and tonics. Antipyrin and bromides have proved beneficial, and quinine in tonic doses has appeared to be of special service.

The disease runs its course in a brief period, usually varying from two to four days. In many instances the indisposition hardly confines the patient to his room. In others, the suffering for one or two days is very severe, and decided treatment is indicated. During convalescence patients suffer most from a sense of weakness, and in many instances this sense of prostration is continued for a number of days. It is important that all the essential facts connected with this epidemic be carefully observed, collated and published. If bacteriologists can add to our knowledge as to its pathology, their contributions will be everywhere welcomed.

EDITORIAL NOTES.

HOME.

DR. LEWIS H. SAYRE, a son of Dr. Lewis A. Sayre, the well-known surgeon, was found dead on a sofa in the reception parlor of his father's home, at 285 Fifth Ave., New York, on the 3d inst. He had been working very hard at his professional labors recently, and he went home worn out, and threw himself on the sofa and fell asleep. A servant was the first to discover his death. He had been troubled with heart weakness for some time, and his sudden death was attributed to heart failure. He was 38 years old, and had a lucrative practice. Some years ago he married Miss Alice Pomeroy, the daughter of a wealthy dry goods merchant of New York. His widow and three children survive him. Dr. Sayre was graduated from Bellevue Hospital Medical College in 1876. He was a member of the New York County Medical Society, the American Medical Association, the Pathological Society and the Neurological Society.

DEATH OF DR. WALTER K. BOYLAN.—The cable announced last week the death, in Berlin, Germany, of Dr. Walter K. Boylan, of Cincinnati, on December 26, last. Dr. Boylan was a young physician of promise and prominence in the profession of his city. Graduating from the Medical College of Ohio in 1883, he was at once elected Professor of Materia Medica in the Cincinnati College of Medicine and Surgery, a position which he held until the election of a new faculty a few years later. At the time of his death he was pursuing studies in Europe.

ANOTHER MEDICAL LIBRARY PROJECT.—A nucleus for another medical library and *rendezvous* in New York has just been brought into possibility by the junction of the Mott Memorial Library and the State Medical Association. They have 5,000 volumes and 8,000 respectively and most eligible headquarters at 64 Madison Avenue. They have a small fund each, and the opportunities for a steady increase in a membership of 700 physicians in the State Association. Many a useful institution has had its beginnings in a more meagre foundation than is presented by the above combination.

THE HOSPITAL SUNDAY FUND IN NEW YORK CITY.—The present indications are that large contributions have been made to the annual Hospital Fund. The amount obtained in 1888 was $52,139, an amount which will be equalled, at least, this season. The collection in one church amounted to a little over $8,000.

THE SOUTHERN CALIFORNIA MEDICAL SOCIETY will hold its fifth semi-annual meeting at Santa Barbara in June.

THE OHIO BOARD OF PHARMACY will hold meetings for the examination of persons desiring to register during 1890, as follows: Cincinnati, Monday, Jan. 13; Columbus, Tuesday, March 25 and Monday, May 12; Toledo, Tuesday, July 22; and Cleveland, Monday, Oct. 13.

NEW YORK ACADEMY OF MEDICINE.—Mrs. Eliza C. Farnham has given $10,000 to the library fund in memory of her deceased husband, Dr. Horace P. Farnham.

A COURAGEOUS AMBULANCE SURGEON.—*The Medical News* says that Ambulance Surgeon Mead, of St. Mary's Hospital, Brooklyn, was called to an elevated road accident, and found that the mangled, yet conscious patient had fallen and been caught under a locomotive. The surgeon administered a hypodermic to the injured man before the latter had been disentangled from the track, and while the two, surgeon and patient, were lying beneath the fire-box of the engine.

THE KANSAS MEDICAL CATALOGUE is the title of a new medical journal published at Fort Scott, Kan., and edited by Drs. F. F. Dickman, J. B. Carver and J. M. Poindexter.

THE STATE MEDICAL SOCIETY OF KANSAS will hold its next annual meeting at Salina, on Tuesday, May 13.

THE FIRST DISTRICT DENTAL SOCIETY OF THE STATE OF NEW YORK will hold its twenty-first anniversary meeting in New York City on the 14th, 15th and 16th inst.

DR. JOHN S. MARSHALL, of Chicago, has been appointed Secretary of the National Association of Dental Faculties. The late Secretary, Dr. Junius E. Cravens, resigned in consequence of having taken up his residence in Paris, France.

THE POLYCLINIC MEDICAL SOCIETY gives, under its auspices, a lecture, or holds a meeting of its Therapeutical Section, every Tuesday evening at 8 o'clock, at the College Building, N. W. corner of Broad and Lombard streets, Philadelphia, during the season. The whole course is free to members of the profession and to medical students. The following lectures and meetings are announced for 1890:

January 7, Dr. Alexander MacCoy, "The Clinical Features of Tuberculosis of the Larynx."

January 14, Dr. B. F. Baer, "Abdominal Surgery."

January 21, Dr. Thomas G. Morton, "Modern Treatment of Club-foot."

January 28, Meeting of the Therapeutical Section.

February 4, Dr. Edward P. Davis, "Use of the Obstetric Forceps."

February 11, Dr. John B. Roberts, "The Anatomy of Facial Expression."

February 18, Dr. J. Henry C. Simes, "Prostatorrhœa."

February 25, Meeting of the Therapeutical Section.

March 4, Dr. R. W. Seiss, "Inflammation of the Eustachian Tube."

FOREIGN.

CHOLERA AND ITS PILGRIMAGES.—*The Indian Medical Gazette* says that some months after the outbreak of cholera at the Pearl Fisheries of Ceylon, there has been a fresh outbreak of cholera on the island, brought about by a Roman Catholic pilgrimage to St. Annas, at Palleecudava. This pilgrimage seems to have been attended by people from all parts of the island, including the Northern Province and Southern India, where cholera was known to be present. The history of the outbreak is similar to those which occur so frequently in India. Immediately the pilgrims reached St. Annas' deaths from cholera began. A panic ensued. The Roman Catholic Bishop broke up the festival; the crowd was dispersed and carried cholera with them wherever they went.

THE SECOND CONGRESS FOR TUBERCULOSIS will be held in Paris during the latter part of July. Prof. Villemin will act as President. The following questions are to be discussed: 1. The Identity of Human and Bovine Tuberculosis; also that of Other Animals; 2. The Bacteriological and Morbid Associations of Tuberculosis; 3. The Isolation of Tuberculous Subjects; 4. The Agents Capable of Destroying Koch's Tubercle Bacillus, With a View to the Prophylaxis and Therapeusis of the Disease in Man.

A HELPFUL ASSOCIATION IN VIENNA.—The *British Medical Journal*, December 21, 1889, states that the Governor of Lower Austria has sanctioned the formation of the American Medical Association of Vienna, whose object is the taking in hand of British and American medical men immediately on their arrival at the University. The Association, made up of physicians for the most part, arranges that each student shall have a committeeman, to look to for information, who is interested in the same line of study. The Rev. Francis Gordon has been chosen to act as Secretary and Treasurer of the Association and may be addressed at 12, Landesgerichts strasse. The entrance fee is one gulden, and membership may be enjoyed by any English-speaking physician or medical student. The Association will be helpful in showing to strangers how they can avoid extortionate charges and otherwise economize. According to its estimates an economical student can live on $30 to $40 per month. In addition to the lectures regularly scheduled in the *Calendar*, by the professors, there are the lectures by the assistants, new courses of which are being developed all the year round, new talent being discovered and forced to the front every session.

TOPICS OF THE WEEK.

THE APPROACHING REVISION OF THE PHARMACOPŒIA.

"Eile mit weile."

Progress in pharmacy is progress in medicine, and all physicians should be inspired by a desire to improve, in every possible way, the Pharmacopœia, which represents the accumulated experience of ages in the science and art of pharmacy, and constitutes the most reliable guide to pharmacists and physicians who would acquaint themselves thoroughly with medicinal principles and their effectual combination in eligible pharmaceutical preparations. The value of any addition to the Pharmacopœia suggested by pharmacists should, therefore, receive the earnest consideration of physicians, and the medical profession should be able to furnish from their clinical experience many important and vital suggestions to the committee who are entrusted with the important duties of revision. This committee, indeed, invites criticism from all well-informed sources, and has widely distributed a Digest of Criticisms of the present Pharmacopœia for the purpose of the freest and fullest discussion by all concerned. It is in this spirit that the following criticisms are submitted.

As the generally accepted standard of strength and quality for medicinal preparations, the United States Pharmacopœia should be most carefully compiled and removed as far as possible from all mercenary influences. One interest which is liable to influence the publication of the next Pharmacopœa disadvantageously, unless such influence is properly controlled and judiciously acted upon, is the manufacturing pharmaceutical interest.

Owing to its wide-spread circulation, its general acceptance as a standard, the Pharmacopœia must exert a very powerful influence both with physicians and druggists in the direction of inducing a larger consumption of pharmaceutical preparations. Thus, houses who own copyrighted, trade-marked, or patented preparations would be willing to pay large sums to induce the Pharmacopœia to recognize the same. The adoption of a new standard of pharmaceutical preparations to substitute existing standards of the present day could be used to great and profitable advantage by the manufacturers if they controlled, by copyright, or trade-mark, or patent, the name of the line of pharmaceutical preparations, or the line itself. What a profitable thing for the originator, for instance, would be the recognition by the Pharmacopœia of the line of pharmaceutical preparations known as specific medicines, specific tinctures, or green root tinctures, as a substitute for the fluid extracts which have been so long in vogue. Shall antipyrin, antifebrin, sulphonal, chloralamid, and many other specialties of foreign manufacturers, who are flooding the country with remedies protected by patented processes or fancy trade-marked names, so as to secure to their possessors a permanent monopoly at any outrageous price they may wish to arbitrarily fix, be admitted to the Pharmacopœia? Are such remedies and their literature to usurp a place in scientific literature, to the disgrace of the legitimate interests of pharmacy, the aggrandizement of foreign capital, and the destruction of pharmaceutical nomenclature?

We do not wish to be misunderstood in this matter. We do not wish to reflect on the therapeutic utility of such preparations, but merely to make thoroughly apparent the caution and care necessary to consider the true character and tendencies of the many products advanced for Pharmacopœial endorsement.

It is not necessary to amplify on these points. The tendencies of these defilers of the Pharmacopœial temple are too well known to ever receive the recognition they covet.

There are, indeed, many actual and much needed improvements required in this temple of pharmacy, if we may continue our simile, which have none of the disadvantages, to say the least, of this rapidly growing progeny of foreign invaders. Let the committee address their attention to these. To what standards of excellence do our average manufacturers of medicine live up to at the present time? Are these standards the highest and best known to pharmaceutical science? Not at all, and we shall take occasion, in further comments on this important subject, to mention some improvements in pharmaceutical processes, the claims of which are eminently more worthy of consideration by the Committee of Revision. It will be readily seen that manufacturers of pharmaceutical preparations generally could well afford to bring to bear great influence upon the projectors and controllers of the Pharmacopœia, if they had the slightest hope of inducing the committee to act upon their suggestions.

It is, therefore, essential that the committee in charge of the Pharmacopœia should be actuated solely by a regard for scientific and humanitarian interests. They should be men not only honest in purpose, but they should also be sufficiently competent by experience to judge as to the merits of each individual presentation. They should be free from all bias and prejudice. *Eile mit weile.* To make haste slowly should be their guiding rule.—*Medical Age.*

EXECUTION BY ELECTRICITY IN NEW YORK.

The following is an extract from a decision in the Supreme Court of New York, rendered December 30, 1889, regarding the alleged unconstitutionality of the law providing for the electrical execution of criminals. The motion of the opponents to the new law is denied by this decision, which is written by Judge Dwight, and which denies the contention of those opponents that the law prescribes "a cruel and unusual punishment."

"It detracts nothing from the force of the evidence in favor of this conclusion that we do not know the nature of electricity nor how it is transmitted in currents, nor how it operates to destroy the life of animals and men exposed to its force. Neither do we know the nature of the attraction of gravitation, which is the operative force employed in the infliction of death by hanging, nor how that force operates to draw towards each other masses of matter freely moving in space. We know these and all other forces of nature by their effects, and we avail ourselves of them in the daily processes and pursuits of life with a confidence based upon common experience, without inquiry as to the essence of the force or the mode of its operation.

"The experiments with electricity as a death-dealing agency disclosed by the evidence were necessarily confined to the lower animals, but unfortunately the experience of mankind in this respect has not been confined to experiments purposely made. Death by strokes of lightning has been known to the world in all ages, and the frequency and publicity of death by accidental contact with electric wires during the last few years, and especially the last few months, have made the deadly power of the electric current shockingly familiar wherever the newspaper is read.

"In most casualties of this sort, the exposure being wholly accidental, the contact is imperfect, the resistance unregulated and the force of the current accidentally deflected through the body of the subject, only a fraction of that being transmitted through the wires. Accordingly, in some cases the victim of the accident has escaped with his life, and in some cases death has been accompanied with burnings and contortions. But in all such cases the effects mentioned have evidently been due to lack of force in the current received or to the imperfect manner of its application to the body of the victim, and the general result of these demonstrations in the light of the scientific evidence in this case is, as we think, to remove every reasonable doubt that the passage of a current of electricity of a certain well-determined intensity through the vital parts of the human body under chosen conditions of contact and resistance must result in instant death.

"If the question here were of the wisdom and advisability of the proposed change in the mode of inflicting the death penalty the discussion might be prolonged. As we are confined to the question of the constitutionality of the statute which introduces the change, we deem further discussion unnecessary for the presentation of our views."

The question has now been passed upon by all the courts save one, the Court of Appeals, before whom it will be brought early in the current term.

A MUSEUM OF SOCIAL ECONOMY.

It is officially announced that the Cross of the Legion of Honor, with the grade of Chevalier, has been conferred on Mr. Ernest Hart, in recognition of his services to France, especially as President of the Social Science Committee in the recent International Exhibition. It is hoped that suitable recognition will also be made of the services of Dr. Louis Parkes, who acted as the very efficient Honorary Secretary in organizing this Section, which has proved so interesting that the French Government has determined to establish a permanent Museum of Social Economy, which of course includes hygiene, education, public sanitation, and other cognate subjects. M. Léon Say, the eminent President for France of the Section, has appealed to English exhibitors to allow as many of their exhibits as possible to remain in the permanent museum. It is hoped that a large proportion of the exhibitors will comply with this request, if not in form, in substance, by leaving their exhibits or by forwarding equivalent models and books.—*Brit. Med. Jour.*

PRACTICAL NOTES.

THE CARRIAGE OF INFECTION BY PHYSICIANS.

With reference to the communication of contagious diseases by physicians, a question that is now being agitated in England, a correspondent of the *British Medical Journal* writes that "although it cannot be denied that it is possible for a medical man under some circumstances to convey infection from one patient to another, the risk of this taking place is, if ordinary precaucautions be taken, almost *nil*. This is clearly shown by the experience at the London Fever Hospital, where the resident medical officer in the discharge of his duties is constantly passing from the scarlatina department to the departments for measles, typhoid, diphtheria, etc., and yet it has never been found that he transfers these contagia, although he would be much more likely to do so than an ordinary practitioner, inasmuch as the poison is necessarily more concentrated in a fever ward than in a room where only one patient is treated. The medical attendant is not, as a rule, brought into sufficiently close and prolonged connection with his patient for his clothes to receive any very large amount of the contagion, and a short exposure to the open air is generally sufficient to disinfect him. Nurses, no doubt, whose clothes from prolonged and constant contact with the patient become saturated with the poison, may readily convey infection. The only precautions taken by the physicians to the fever hospital—and a long experience has shown them to be quite sufficient—are to wear a special outer garment and cap in the wards, but even this is not done by the resident medical officer.

"For all ordinary purposes washing the hands in a disinfecting solution and a short exposure to the fresh air will, I am sure, sufficiently disinfect the practitioner, though it is advisable that he should change his coat, and he ought, as far as possible, visit his infectious cases last.

"In the case of smallpox, however, where the poison is present in a liquid form, and may possibly get smeared on the clothes, a change of clothes is necessary."—*Medical News.*

THE SIGNIFICANCE OF ERYTHEMA.

Erythema multiform is more and more growing in importance as a symptom or precursor of not a few grave diseases. It does not do for us now to regard an attack of it as simply due to indigestion. It has been shown that the occurrence of erythema may mark the beginning of typhoid fever, may occur as one of the symptoms of acute or chronic malarial disease, may be a manifestation of a rheumatic or lithæmic state, or may even, as it were, be an abortive manifestation of any of these diseases. Our attention is again drawn to the fact by Dr. Moncorvo, of Rio de Janeiro, who, in a recent number of the *Revue mensuelle des maladies de l'Enfance*, reports two cases of erythema nodosum occurring in the course of acute malarial disease and yielding promptly to quinine.—*N. Y. Med. Journal.*

THE TREATMENT OF ACUTE CATARRH OF THE RECTUM.

Quite frequently the practitioner of medicine sees cases in which the entire list of remedies generally found of value in the treatment of diarrhœa have proved useless, or merely palliative in effect. While they may control the frequent movements of the bowels for a time, the trouble reasserts itself as soon as the medicine is withdrawn, at the best in a somewhat modified form. Careful inquiry will show, in such cases, several points of value as to diagnosis and treatment. The attack has probably been preceded by a few days during which there has been a sensation of weight and fulness in the rectum and about the anus; following this, a sensation of bearing down asserts itself, accompanied by violent pain referred to the region of the stomach, or small gut. So severe is the pain in its paroxysms that the patient may cry out with it and the perspiration break out over the body. At first small passages may occur, but after a few stools they consist of wind and a few drops of mucus, which is expelled after a period of agonizing pain and tenesmus. Opium makes the state ultimately far worse than before, and nearly all astringents are valueless. Under these circumstances small doses of chlorate of potash injected into the rectum are most serviceable, only one or two injections being necessary in some acute cases to produce a cure. A saturated solution of the potash in water should be employed and about half a tumblerful injected each time, very slowly and without force, and retained for ten or fifteen minutes. Large injections will cause pain and expulsion of the liquid, and no result will be attained.—*Medical News.*

SOMNAL, A NEW HYPNOTIC.

RADLAUER, of Berlin, has introduced a new combination to which he has given the name "somnal." This substance is composed of chloral, alcohol and urethane, and is said to be a true chemical compound, and not merely a mixture. It is, therefore, different from the "chloralurethane" which has been used, for a year or more, by alienists and nerve specialists, and which has been considered by some of them both safe and reliable. The *British Medical Journal* says that somnal occurs in clear, colorless crystals, having a slightly bitter taste and being readily soluble in water and in alcohol. It is given in doses of thirty grains, and sleep is produced in thirty minutes. The sleep is described as sound and natural, lasting from six to eight hours, and followed by no unpleasant effects. Somnal does not disturb the digestion, has no influence over the pulse or temperature, and, in fact, has the excellent qualities of both chloral and urethane without their disadvantages. Favorable experience with the drug is said to have been reported from the hospitals of Berlin and Moscow.—*N. Y. Med. Journal.*

PULMONARY HÆMOPTYSIS.

M. VIDAL recommends treating pulmonary hæmoptysis in phthisical patients with ipecacuanha and antimony, or kermes (oxydum stibii sulphuratum rubrum), in small doses every ten minutes. If this does not completely arrest the hæmoptysis, M. Vidal counsels applying Gounod's cupping glasses or ligating a limb. When fever is present, two grams of ergot of rye and one gram of sulphate of quinine divided in four doses, to be taken every three hours, M. Vidal has found successful, but condemns the use of iron or arsenic, generally considered good in treating hæmorrhage.

CATARRH SNUFFS.

For scrofulous rhinitis:

℞ Sulphophenate of zinc	20 centigrams.
Salicylate of bismuth	4 grams.
Iodol	3 grams.
Tannate of zinc	2 grams.
Pulverized tobacco	10 grams.

For chronic catarrhal rhinitis:

℞ Pulverized alum	2 grams.
Borax	2 grams.
Menthol	20 centigrams.
Tannate of zinc	3 grams.
Tannate of bismuth	3 grams.
Locopodium	8 grams.

—*Journ. de Méd. de Paris.*

TREATMENT OF PROFUSE MENSTRUATION.

℞ Dialyzed ergotine	40 grams.
Distilled water	70 grams.
Glycerine	20 grams.
Salicylic acid	20 centigrams.

T. One teaspoonful diluted with three teaspoonfuls of water to be injected in the rectum once a day after stool.—Reinstadter, *Gaz. Méd. de Liège.*

URAL, A NEW HYPNOTIC.

This body, obtained by dissolving urethane in chloral, presents itself in form of crystals soluble in alcohol; little soluble in water, which volatilizes without decomposing, and is fusible at 106°. It imparts a bitter taste. It does not modify the blood pressure, and its administration is never followed by accidents. It is prescribed with success in cardiac affections, mental maladies, hysteria, etc.—*La France Médicale.*

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

Stated Meeting, June 12, 1889.

DR. CHARLES E. HAGNER, PRESIDENT, IN THE CHAIR.

DR. P. J. MURPHY reported a case of

CANCER OF PREGNANT UTERUS AT TERM.

Cecilia H., æt. 34, colored, entered Columbia Hospital for Women and Lying-in Asylum, May 24, 1889. She was born in Virginia, resident of the District of Columbia for the last fifteen years; married; puberty unknown; miscarriage or abortion, none; about four years ago gave birth, after a natural labor, to a living child, which she nursed; last menstruation some time in September, 1888; time of quickening, unknown; had some morning sickness and no headache during the present pregnancy. On physical examination the abdomen was found very much enlarged; fundus uteri extending two inches above umbilicus; fœtal heart not heard; external genitals normal; cervix uteri one-half inch in length admitting tip of finger; slight œdema of the lower extremities. Urine dark amber color, acid reaction, sp. gr. 1030, no albumen. Bowels regular while in the hospital.

June 7, 9.30 A.M. Patient complained of a feeling of nausea and of pains in the back and sides; was put to bed, the nausea soon ceased, and as the pains became very slight she was left resting quietly on the bed. At 11 A.M. she had another attack of nausea and vomited about a half pint of greenish-yellow (bilious) fluid. Ordered mustard plaster over the epigastrium. At this time there was a slight flow of pale yellow fluid from the vagina, and on examination the woman was found to be in the second stage of labor, the vertex having descended more than half way through the parturient canal, the occiput rotating towards the symphisis pubis from an L. O. A. position. The nausea soon ceased and at 11.30 A.M. the occiput began to protrude through the vulva, and after a few apparently natural pains the head was delivered, and during the next pain, which followed after an interval of about a minute, a still-born female infant was expelled, followed immediately by a gush of bloody fluid (about three pints), accompanied by the placenta and fœtal membranes. The uterus, after the expulsion of the after-birth, became hard and firm, but irregular in form (nodulated), and extended nearly to the umbilicus.

Two drachms of the fl. ext. of ergot were administered internally, and as the patient now for the first time began to show decided symptoms of exhaustion (other than what might be attributed to the nausea) one drachm of the fl. ext. of ergot was administered hypodermically. The pulse was observed to quickly become very rapid and feeble, the countenance pale, and the surface of the body cold. She was kept lying still, her head lowered, the foot of the bed elevated; two drachms of whisky were given by the mouth, but she could not swallow it, and one drachm was administered hypodermically; hot-water bags were placed around the body, and the lower extremities bandaged with towels from the feet upwards. The patient, whose pulse had been scarcely perceptible, became somewhat aroused, but gradually passed into a state of low muttering delirium. She remained in this condition one hour and forty-five minutes, though repeated hypodermic injections of whisky, supplemented by tincture of digitalis, had been administered, the pulse during the whole time being very feeble. At 1.30 P.M. she raised her head and made several spasmodic efforts to turn from one side to the other, and then fell back upon the bed; her heart ceased to pulsate, and after ten or twelve spasmodic efforts to catch her breath, respiration ceased.

Throughout the post-partum period the uterus remained in the condition it had assumed at the expulsion of the after-birth. There was very little, if any, post-partum hæmorrhage from the uterus. An examination of the after-birth showed that it had been expelled entire. Throughout its substance there were interspersed numerous caseous masses, varying in size from a pea to a cherry. They were roughly estimated to compose one-tenth the mass of the placenta. During the vaginal examination, fifteen minutes before delivery, there was no perceptible hæmorrhage, the index finger on being withdrawn was tinged with a pale yellowish fluid, a small amount of which had just previously been expelled.

Child, female, weight 5 lbs. 12 ozs.; placenta, weight 1 lb.

The post-mortem was made fifteen hours after death by Dr. William P. Carr. Body fairly well nourished; rigor-mortis; abdominal walls thin and flabby, showing outline of the uterus, which can be distinctly felt as a firm, elastic, nodulated tumor, extending a little above the umbilicus. On opening the abdominal cavity it is found filled with a half gallon of bloody fluid. The uterus extending above the umbilicus is mottled with slate color, white, dark purple, and bright red spots, and is studded with firm white and bloody nodules, varying in size from a pin head to a walnut. It has a raw appearance in places, as if denuded of epithelium, and blood is oozing from nearly the whole peritoneal surface. Upon removing the uterus its walls are found to be about two inches thick, composed mainly of firm fibrous nodules, while the proper muscular structure of the organ is dark red, nearly black in places, infiltrated with blood which oozes from its uncut surface. The surface is so soft and mushy as to resemble a blood-clot. Evidently more than a quart of blood had oozed from the peritoneal surface of the uterus into the peritoneal cavity. The ovaries are atrophied and not more than one-fifth of an inch thick. Right tube was swollen to the size of the thumb, infiltrated with serum, and of the consistency of jelly. Left tube normal size, but dark red color. Broad ligaments and all the pelvic tissues infiltrated with serum. Lymphatic glands, near the sacrum and lumbar vertebræ, as large as almonds, and of a dark red color, some nearly black. Kidneys have some fatty striæ in the pyramids. Thoracic cavity: Lungs gray, abundantly mottled with black pigment. Pericardium contains half pint of greenish-yellow serum. Heart covered with yellow fat, and one-third larger than normal. Both ventricles flabby and dilated. Both auriculo-ventricular openings so dilated that the valves are insufficient. Wall of the left ventricle apparently normal. Wall of the right ventricle of a uniform yellow color, presenting no appearance of muscular tissue and composed apparently of fat, is only one-fourth inch thick.

The cause of death was from the loss of blood from the diseased uterus, both from its cavity and from its peritoneal surface, a much smaller amount of hæmorrhage sufficing to cause death than if the heart had been normal.

DR. J. F. THOMPSON said that, looking at the specimen, it seemed as if the bleeding from the outer surface of the uterus was caused by the breaking up of adhesions, due to uterine contractions during labor. There was one spot especially that looked as if adhesions had given way. It was difficult to explain this hæmorrhage unless it was upon this theory.

To a question by Dr. Hamilton:

DR. MURPHY replied that there had been no traumatism during pregnancy, nor had there been hæmorrhage of an unusual character during labor.

DR. HAMILTON thought that adhesions between the diseased organ and neighboring parts, and their separation, accounted for the hæmorrhage. It was well known that after injuries to the mesentery the vessels would bleed freely upon contraction of the bowels. In his case of wound of the mesentery and bowels a very free hæmorrhage supervened from a small abrasion, forming a large hæmatoma. If this could occur from a small point, we could readily see how the breaking up of adhesions over so large a surface would lead to a profuse and fatal hæmorrhage.

DR. MURPHY, in closing, said he would defer further remarks until after the microscopic examination of the specimen. He took the tumor to be malignant. His first idea of the cause of the hæmorrhage had been that it was due to pressure upon the dense fibrous, non-yielding tissue of the uterus by the contraction of the abdominal muscles. But he now thought that Dr. Thompson's suggestion afforded a clue; that, in fact, it explained the hæmorrhage to his satisfaction; he therefore accepted it as correct.

DR. JOHN B. HAMILTON reported a case of

DOUBLE CRYPTORCHIS.

The patient, aged 49, was referred to him through the kindness of Dr. Johnson. Dr. Hamilton found a swelling in the left groin in the inguinal canal, while a smaller swelling, about the size of a filbert, occupied the right groin. The former was about the size of a hen's egg. The scrotum was empty, hence it was a case of double cryptorchis, a name properly applied, even if the testicle was located in the canal. Cases of monorchis were comparatively common, but a double cryptorchis was rare. There was in this case severe and constant pain in the left swelling, which had undergone sarcomatous degeneration. The operation for its removal was by a simple incision over the canal, enucleation of the diseased organ, and ligature of the cord by catgut, after which the stump was dropped back and the pillars closed by sutures so as to prevent hernia. The other testicle was not enlarged, but in the canal, and as it was not painful and gave no trouble, it was left alone. It would in time, probably, undergo the same degeneration. He had desired to bring it down into the scrotum, and on grasping it could almost get it into place, but the cord was stretched so greatly that he feared atrophy or rupture of the vessels would result, hence he preferred not to put it to the test. He would, on a future occasion, present a full paper on the entire subject, but at present simply desired the reference of the specimen to the Committee on Microscopy.

Obstetrical Society of Philadelphia.

Stated Meeting, Thursday, October 3, 1889.

DR. THEOPHILUS PARVIN IN THE CHAIR.

DR. E. P. BERNARDY reported a case of

SUPPURATING POST-PUERPERAL HÆMATOCELE. OPERATION, CURE.

Mrs. McM., æt. 38, sixth pregnancy. Fell in labor April 19, 1889, about 8 o'clock in the evening; head presentation, right occipito-posterior position; delivered about midnight of same evening of a large living male child. Labor seemed normal, but somewhat tedious in regard to her former labors, no doubt caused by the position of the head, which gradually rotated to an anterior occipito. There was a constant aching feeling between the pains, not that absence of pain generally expected in natural labor pains; as the patient remarked, it felt like a bad toothache. Third stage normal, placenta came away within twenty minutes, uterus contracted rapidly and firmly. Shortly after the termination of labor, the muscles of the calf of the left leg became painfully cramped, lasting nearly an hour; hot applications and rubbing seemed to relieve the patient. Pulse about 80, but weak.

About 6 o'clock in the morning, the husband called at my office and stated that about 4 o'clock his wife had been taken with a sudden sharp pain under the right breast, which prevented her breathing freely. Ordered teaspoonful of liq. morphiæ sulph. every half hour, and warm applications to the side. Saw her shortly afterwards; pulse 120, temperature 101°. Sharp, agonizing pain below right breast; impossible to take a full breath. Auscultation negative, no pain over the abdomen, strong pressure being made over its entire surface.

April 23, pain under breast relieved. Sense of fulness of the abdomen, constipation, cannot pass her urine, urine drawn off by catheter; 1 drachm Rochelle salt every hour until free purgation took place. Next day, pulse quick and irritable, temp. 103°, tongue dry, still unable to pass her urine, bowels open freely; complains of a sense of fulness in the rectum. Examination by the rectum shows a tumor about the size of an egg pressing in its walls; vaginal examination reveals a tumor behind and to the left of the uterus. Ordered hot vaginal injections of $\frac{1}{1000}$ bin. iod. mercury, poultices over abdomen. There being no positive pain, only a feeling of fulness, no opium was given. From this time up to the day of operation (May 5, 1889) the temperature varied from 102° to 104°; under large doses of sulphate of quinine it would drop.

April 27, 1889, examination by rectum and vagina shows the tumor increasing rapidly; it is now the size of a large orange, and very sensitive to the touch.

May 1. The tumor now fills the entire rectal cavity, pushing down to almost the external sphincter. The entire left side of the pelvis is completely filled by the tumor, pushing the enlarged uterus, which is movable, well to the right side, making it appear as if there were another tumor. Advised operation.

May 3, case seen by Dr. Joseph Price; same condition as on May 1. Patient hectic toward the afternoon; face has assumed a peculiar yellowish appearance, eyeballs yellow.

May 5, operation. Present, Drs. Joseph Price, M. Price, Solis-Cohen. Operator, Dr. Eugene P. Bernardy. The usual median abdominal incision was made. On introduction of the finger in the abdomen, the entire left side of the pelvis behind the uterus and broad ligament was found filled by a tumor, surrounded by adhesions; slight adhesions to the intestines, which were readily separated before enucleating the left side tumor. In passing the finger behind the right side of the uterus, the finger ruptured some slight adhesions, entering a cavity from which freely flowed thick black blood, looking and smelling like blood contained in an extra-uterine sac. After enucleating the left side tumor it left an immense cavity which was, as well as the abdominal cavity, well douched with hot water. Both ovaries and tubes were healthy, and were not touched. Glass drainage tube introduced, and abdomen closed.

On the day of the operation the pulse was 120, temp. 102°. The day following, pulse 96, temp. 101°. Third day after operation, temperature and pulse normal. On the sixth day, glass drainage tube changed to rubber tube. Three days later, tube taken out; stitches taken out the sixth day, union except where drainage is placed. May 23, 1889, entire cut healed, and patient discharged during the first week in June.

DR. J. PRICE: I saw this patient with Dr. Bernardy and Dr. Cohen; and to have a purely medical man urge the importance of abdominal section in a post-puerperal case is very encouraging. There was a considerable quantity of broken-down blood, which was washed out with difficulty. If the case had not been a post-puerperal one, the history would have been that of an extra-uterine fœtation. This case demonstrates most forcibly the fallacy of claims made in regard to refinements in diagnosis, and shows the folly of claiming a positive diagnosis.

DR. H. H. KYNETT: I report the first two cases because they present some important features for consideration in the

TREATMENT OF PELVIC TROUBLES.

The specimens of the first case I am not able to show to-night, owing to the lapse of time since removal.

Case 1.—L. P., colored, æt. 30, married seven years, and never pregnant; complaining more or less ever since marriage. Abdominal section April 2, 1889. Removal of both appendages for double pyosalpinx and double ovarian abscesses; release of adhesions, irrigation, and drainage. When the peritoneal cavity was opened, there was a free discharge of muddy, blood-stained fluid, indicating a marked peritonitis. Investigation showed this fluid was contained in a sac formed by inflammatory processes, shutting off the pelvic portion from the general peritoneal cavity. The adhesions, however, were friable and easily broken. Contained in this pelvic abscess cavity were four distinct pus sacs, viz.: two huge pus tubes and two ovarian abscesses, the larger the size of an orange. The removal of these sacs was not difficult; the patient recovered promptly, and is now in better health and spirits than since marriage.

Points worthy of notice in this case are:

1. Four distinct abscess cavities within a fifth.

Query, what would have been the result of Martin's treatment of pelvic abscess by vaginal drainage?

2. In spite of careful manipulation, both ovarian abscesses were ruptured in removal, and the walls of the containing sac were very easily broken up. Query, what might electricity, properly applied, have accomplished?

3. When first seen, the patient did not complain of symptoms of acute trouble at all commensurate with the condition revealed.

4. Menstruation has occurred regularly since the operation, bleeding being profuse and lasting three days.

5. Both patient and her husband gave unquestionable histories of gonorrhœa.

The second case was operated on to produce premature menopause for a rapidly growing fibroid uterus.

Case 2.—L. A., white, æt. 28, married six years, no children. Patient believed that she miscarried twice when about two months pregnant, the last time four years ago. Since puberty, menstruation has been very profuse and painful. For the last four years she has been bleeding three-quarters of the time, and latterly has been incapacitated for work. Abdominal section September 11, 1889. Removal of both appendages for double hydrosalpinx and left ovarian cyst. There was also a small cyst in the right ovary. The adhesions were universal and exceedingly tough, making the removal difficult. The uterus was large and hard. Irrigation and drainage.

Patient made an uninterrupted recovery, and is now sitting up. This case is particularly interesting, as before operation it seemed a fit case for electricity. The uterus being high in the pelvis and large, the condition of the appendages was not easily discoverable. Irrigation and drainage were used for fear of hæmorrhage from the separated adhesions.

The third case is interesting on account of the comparative variety of the tumor.

It was removed Sept. 8, 1889, from the breast of Mrs. P., white, age 32, married six years, two children. When the patient began to menstruate, at the age of 16 years, she first noticed a small lump in the inner of left breast, on a level with the nipple. It occasioned no trouble. It remained quiescent during her first gestation and nursing, in fact until three months after her second child was born, when it began to enlarge. She never had any difficulty in nursing, but remarked that after the tumor began to grow she had less milk in the left breast. At this time, also, the tumor pained her for a few days and led her to fear an abscess. The pain subsided, but the enlargement continued. She was afraid of cancer, and desired the tumor removed.

When seen, the tumor was somewhat larger than it now is. The skin was normal in appearance and freely movable over the mass. The superficial veins were enlarged. The nipple was not affected, and the growth appeared outside the areola. It was firmly adherent in the glandular structure of the breast, and required dissection by the knife. Its contents had the greasy, sticky, cheesy appearance of a dermoid cyst. There were no other points of thickening or hardness discovered in the breast.

I believe it to be a solid milk cyst. Microscopic examination has not yet been made.

Dr. W. L. Taylor reported the

REMOVAL OF A LARGE OVARIAN CYST, FOLLOWED BY RUPTURE OF THE RIGHT COMMON ILIAC VEIN.

The patient, of whose condition I beg to present the following history, was sent to me by Dr. D. L. Hetrick, of Bedford county, after he had diagnosed the existence of an ovarian cyst.

Miss L. M., æt. 24, single, tall, very much emaciated; abdomen enormously extended; puberty at 19; menses regular for three years, until July, 1887. Two weeks before her menstrual period, whilst in the harvest-field, after drinking a large quantity of cold water, had a severe chill. Menses failed to appear in July and August. In September, 1887, the menstrual flow reappeared, but there was no discharge again until March, 1888, when there was a slight flow for three or four periods, disappearing then until after the operation. In November, 1887, had an attack of malarial fever, but never was well after the chill in July. After this attack of malaria a lump appeared in right side of abdomen, which never caused any pain, but only a sense of discomfort from pressure, and which increased rapidly in size.

Upon examination the abdomen gave evidence of the presence of a very large encysted fluid, ovarian in character. On July 7 I operated, with the assistance of Drs. W. A. Carey and E. R. Kirby, and removed a non-adherent cyst of the right ovary. The fluid of the cyst was syrupy and very heavy, weighing fully fifty pounds. The pedicle was unusually thick and was tied in sections, and finally with a Tait ligature. The steps of the operation were devoid of special interest, and but little cyst fluid or blood escaped into the abdominal cavity. This was thoroughly washed out, and I remarked the absence of bleeding-points and proceeded to protect the intestines preparatory to the insertion of my parietal stitches. Noticing a slight oozing of blood from the region of the pedicle, I investigated, and found that a couple of veins, which were greatly distended, had ruptured just beneath my ligatures. These I tied securely and removed cloths. Whilst doing this, I noticed higher up—fully as high as the sacro-iliac juncture, and to the right side—what appeared like an adherent intestine, rapidly distending, with a central portion most distended.

This rapidly thinned out and gave every appearance of speedy rupture. Touching it gently with my finger, it burst instantly, and there was a frightful gush of blood. I quickly grasped with my fingers the bleeding-vein, for such it proved to be, and once more it broke down. I then caught it with a large Pean forceps, which imperfectly controlled the hæmorrhage, and, guiding with my left index-finger a large curved needle, I separated the vein from its artery and carried ligatures securely around it. These immediately stopped all hæmorrhage, but caused a very decided and alarming venous swelling on either side of my ligatures. I removed the large quantity of blood carefully with my hands, and, fearing to even irrigate, closed up after introducing a drainage tube. At the close of the operation, which was lengthened by the hæmorrhage from three-quarters of an hour to nearly two hours, the patient's pulse was 160, temperature subnormal, and respirations about 40. Everything certainly pointed to a positive recurrence of hæmorrhage, and she was most carefully watched.

The amount of bleeding, as shown by the drainage tube, for the first twenty-four hours was small, comparatively speaking, one to one and a half drachms of bloody serum being removed about every two hours. On the third day the bleeding was more profuse; as much as one-half to three-fourths of an ounce was drawn off several times. But this rapidly diminished in quantity, and the tube was removed on the sixth day. On the fourth day the temperature rose to 102°, but quickly dropped to from 99° to 101°, the pulse remaining very frequent, about 120, until far along in convalescence. There never was at any time any evidence of interference with return circulation in right leg. There was, on about the fourth or fifth day, slight pain in right leg, but this also occurred in the left leg, and was rheumatic in character. Convalescence was rapid and uninterrupted, and patient returned home in about four weeks. The size of the vein from which the greatest hæmorrhage occurred was without doubt much increased at the point of hæmorrhage. This dilatation fitted in a sulcus in the cyst wall, and needed only the removal of its support—the cyst wall—and the sudden reflux of blood to cause its over-distention and rupture. Its location and relation to the artery and size proved it to be the right common iliac. The possibility of such a varicosed condition of either of the iliac veins should deter us from emptying a large cyst too quickly, or from turning it out whilst but partially emptied. A smaller canula and complete removal of fluid before the sack is drawn out would be much safer and render less likely an accident which, though infrequent, is yet possible. Here and there, filling up the sulci in the tumor wall, or the interstices between globules, these large veins are apt to distend, and the greater the pressure on either side, the greater will be this distension and thinning of the coats of the vein to the extent of the space. As long as the return of blood is hindered by the pressure of the tumor, and as long as this thin-walled venous sac has the support of the tumor wall, there is but little risk of rupture from over-distension. But remove this support suddenly, remove at the same time this interference with circulation, and we have, as in my case, a hæmorrhage almost uncontrollable. It is almost impossible to conceive of ligation of such a large and important vein without some interference with circulation—at least some œdema. But collateral circulation is plentiful between the two sides, and in my case all the veins were so enormously distended below the tumor that a compensatory circulation was soon established.

Three months after operation Dr. Hetrick kindly writes, stating that our patient is rapidly gaining flesh and is well.

DR. WILLIAM GOODELL: This seems to be an unique case. I have never met with anything of the kind. The theory of varicose condition of the veins is a plausible one. I have never seen anything like it in simple unadherent cysts. In intraligamentary cysts I have often torn deep-seated veins, and have had difficulty in checking the hæmorrhage.

DR. DRYSDALE: Accidents of this kind must be very rare. I have never met with anything of the kind. I imagine that it could only happen where the walls of the vein are diseased, or torn during the operation.

DR. E. W. CUSHING, of Boston: I have no knowledge of any case of rupture of a vein during operation, except from injury. I do not see how the removal of pressure could cause rupture in one place, where all of the veins are varicose, although I have known this to cause syncope.

DR. J. PRICE: I think that there is great danger of wounding the vein by the use of the Baker Brown or Peaslee needle. I think that there is one case on record in which the operator stuffed towels into the abdomen and put the patient in bed to die, without any attempt to secure the offending vessel. These accidents have occurred from traumatism, from manipulation, and wounds made by the use of instruments.

DR. WILLIAM L. TAYLOR: The hæmorrhage occurred so long after any traumatism could have happened, and was so much higher than the pedicle, that I think it cannot be attributed to traumatism. The hæmorrhage was spontaneous. It did not occur gradually, but there was a sudden gush of blood following the touch of my finger.

(*To be concluded.*)

DOMESTIC CORRESPONDENCE.

Audi Alteram Partem.

The Use and Danger of the Nasal Douche.

To the Editor:—At the last meeting of the American Medical Association Dr. W. C. Richardson (The Journal, November 30, 1889), reported three instances of acute inflammation of the middle ear resulting from the use of a nasal spray under high pressure. Since some writers have recommended the spray for cleansing the nose on account of its safety as compared with the more dangerous nasal douche, it does not seem out of place to me to relate my own extensive experience with the use of the latter method. As long as numerous observations have shown that the douche can do harm, it ought not to be given into the hands of patients except on proper indications. This rule, however, is often overlooked, and the douche is not rarely recommended by general practitioners when of doubtful utility.

The only thing the douche can do, is to remove secretion, and it can do this more efficiently than any other method which the writer has ever tested, when the secretion is either abundant or tenacious. Especially is this true when it dries in the form of crusts, as in ozæna. It would of course not be good practice to let the patient remove the secretion for mere palliative purposes with the douche, when more radical means in the hands of the surgeon can cure the disease. Hence, about the only diseases in which I deem it best to give the douche to the patient are the atrophic forms of rhinitis or ozæna and the persistent suppurative rhinitis of children, which, if allowed to go on unchecked, may develop into ozæna. In the latter case, however, I advise the douche only if I cannot see the patient sufficiently often myself.

Personally I use the douche to remove secretion before applying topical remedies to the nose. I find it besides very valuable in searching for a minimal secretion for diagnostic purposes. For this purpose I let the water flow out of the nose into a black rubber basin in which every flake of mucus or pus is readily seen.

I have used the douche, at the least calculation, from 6,000 to 8,000 times in my office, without ever having seen any bad consequences. I have also recommended it to more than a hundred patients, and do not know that I can trace any accidents to its use, beyond, perhaps, one relapse of suppuration of the middle ear. If I have been more fortunate with the use of the douche than some other specialists, it may be due to some precautions which I habitually take. I never use the douche except when both nasal passages are permeable or until after I have made them permeable with forceps (in the case of crusts), or the use of cocaine.

Since the recommendation by Lucas I have always used a solution of bicarbonate of soda, about one-half per cent. in strength, in preference to salt. Not having used salt much I could not say whether it might increase the danger to the middle ear, but I do know that soda solution is rather more convenient for cleansing purposes than salt, although not quite as agreeable to the patient. The water should of course be blood warm.

I find a plain rubber bulb, the natural end of which is used instead of a nozzle, a more manageable instrument than the usual douches in the market or the fountain syringe. The pressure on the bulb can be varied by the hand, or stopped instantly whenever a desire to cough or swallow is felt, and the instrument is always ready for use.

Perhaps more than a dozen times patients have felt the water entering the ear while I was using the douche. With the intention of stopping the feeling of fulness in the ear to which this gave rise I at once inflated the middle ear with air the very first time this accident occurred to me. This procedure stopped all annoyance and no further consequences resulted. I have had the same experience perhaps fifteen to twenty times and it never led to any damage. If the use of the Politzer bag fills the ears and relieves the uncomfortable sensation, it is sufficient; if not, I resort at once to the Eustachian catheter.

The douche has proven a very reliable method in my hands in the treatment of persistent forms of chronic suppuration of the middle ear, especially when bilateral. It has been strenuously urged by Schwartze and his disciples that one of the best means of cleansing the suppurating tympanic cavity is irrigation through the Eustachian catheter. But this procedure is more difficult than mere inflation of air, and of course meets with resistance in small children. The nasal douche, practiced with the bulb as described by me, can easily force a free stream through both Eustachian tubes if some pressure be used. If necessary the patient may be directed to swallow at the same time. In some instances of suppuration of one ear only in which I could not succeed in forcing water through the catheter into the ear, I have used the douche with success, preventing the water from entering the other ear by pressing the finger into the meatus. However, since this is not an absolute hindrance to the flow of water into the tube, I would prefer in such cases irrigation through the catheter if possible. Washing out retained pus from the middle ear with the aid of the nasal douche has often assisted me in reducing the time of treatment of persistent suppuration of the tympanic cavity.

H. Gradle, M.D.

Central Music Hall, Chicago.

BOOK REVIEWS.

LECTURES ON BRIGHT'S DISEASE. By ROBERT SAUNDBY, M.D. Edinburgh, F.R.C.P. London; Emer. Senior Pres. of the Royal Medical Society; Consulting Physician to the Hospital for Diseases of Women, Birmingham, etc., etc. With fifty illustrations. New York: E. B. Treat. 1889. Pp. vi, 290.

This is a thoughtful, scholarly presentation of a subject to which the writer has given much attention for years. The various topics of the work are well illustrated by the citation of clinical cases coming under his observation. A thorough familiarity is shown throughout with the work of the best investigators at home and abroad, while the character of the author's own work is shown by the number of illustrations which he has drawn from his own preparations.

INEBRIETY: ITS ETIOLOGY, PATHOLOGY, TREATMENT AND JURISPRUDENCE. By NORMAN KERR, M.D., F.L.S., etc. Second edition. London: 1889. Pp. 471.

The first edition of this work appeared only a little over a year ago. Such an early call for a new edition shows how favorably the book has been received. In general the author takes the same ground as do most of the recent writers upon the subject, namely, that inebriety is a nervous disease closely allied to certain forms of insanity, manifesting itself sometimes periodically, sometimes continuously; that the patient must have some predisposition to inebriety, the most potent cause being hereditary influence; and, in the matter of treatment, that the physician must be guided by the same principles in accordance with which he studies and treats other diseases. There is apparently nothing new on the subject of treatment. It is still a vexed question, on which authorities differ.

MISCELLANY.

LETTERS RECEIVED.

Dauchy & Co., New York; Dr. James A. White, Richmond, Va.; Dr. Henry O. Marcy, Boston; Dr. D. B. St. John Roosa, New York; American Paper Co., Chicago; Fairchild Bros. & Foster, New York; Armour & Co., Chicago; Chas. H. Phillips Chemical Co., New York; The Imperial Granum Co., New Haven, Conn.; Dr. D. Benjamin, Philadelphia; J. Movius & Son, New York; Chicago, Milwaukee and St. Paul Ry. Co., Milwaukee, Wis.; Dr. Sydney Henry, Mabbettsville, N. Y.; Central Indiana Hospital for the Insane, Indianapolis, Ind.; Dr. Victor C. Vaughan, Ann Arbor, Mich.; Dr. Henry A. Martin & Sons, Roxbury, Mass.; Dr. R. Stansbury Sutton, Pittsburg, Pa.; Dr. J. S. B. Alleyne, St. Louis, Mo.; Dr. W. H. Walker, Louisville, Ky.; B. Westermann & Co., New York; Dr. Chas. F. Disen, Minneapolis, Minn.; Good Health Publishing Co., Battle Creek, Mich.; The Illustrated Medical News Co., London, Eng.; Dr. Henry J. Smith, Blackshear, Ga.; Dr. J. Z. Gerhard, Harrisburg, Pa.; Dr. James D. Robison, Wooster, O.; Century Chemical Co., St. Louis, Mo.; Dr. J. W. Robertson, San Francisco, Cal.; J. Astier, Paris, France; Dr. E. H. Pratt, Chicago; Moore's Newspaper Subscription Agency, Brockport, N. Y.; Dr. A. M. Fernandez, New York; Dr. M. D. Mann, Buffalo, N. Y.; Dr. S. S. Purple, New York; Dr. R. J. Dunglison, Philadelphia; Scott & Bowne, New York; E. Culbertson, Havana, O.; Dr. S. P. Deahofe, Potsdam, O.; Dr. Wm. A. James, Harrisonville, Ill.; Sharpe & Smith, Chicago; Malted Milk Co., Racine, Wis.; Dr. R. Galloway, Bloomington, Ill.; Dr. Harold N. Moyer, Chicago; American and Continental Sanitas Co., New York; Dr. Chas. T. Parkes, Chicago; Dr. J. B. Trowbridge, Hayward, Wis.; Dr. G. V. Woolen, Indianapolis, Ind.; Dr. J. H. Hausen, Lamont, Ia.; The National Advertising Bureau, Baltimore, Md.; Dr. Witt C. Pond, Hartford, Conn.; Longmans, Green & Co., New York; Southern Medical Record, Atlanta, Ga.; Dr. H. R. Hancock, Peach Tree, Tex.; Dr. D. K. Dickinson, Lead City, S. Dak.; The Alabama Medical and Surgical Age, Anniston, Ala.; Dr. H. L. Getz, Marshalltown, Ia.; Dr. H. C. Jones, Decatur, Ill.; Dr. M. H. Turner, Hammondville, N. Y.; Doliber-Goodale Co., Boston; Dr. J. M. Toner, Washington, D. C.; Dr. C. L. Hatfield, Farmer City, Ill.; J. H. Chambers & Co., St. Louis, Mo.; Thos. Swoger, Beaver Falls, Pa., William Burgess Printing Co., Chicago; Dr. Henry W. Williams, Boston; J. H. Bates, New York; Surgeon-General U. S. Army, Washington, D. C.; Wm. R. Warner & Co., Philadelphia; Dr. J. H. Kellogg, Battle Creek, Mich.; The World, New York; Dr. John G. McDougal, New Lexington, O.; Dr. J. J. Stone, Argyle, Minn.; Dr. N. E. Landon, Newark, N. J.; University of Michigan, Ann Arbor, Mich.; Sharpe & Dohme, Baltimore, Md.; Dr. J. E. Boylan, Cincinnati, O.; T. W. Hannaford, London, Eng.; The Chicago Policlinic, Chicago; Thos. F. Goode, Buffalo Lithia Springs, Va.; Dr. C. L. C. Atkison, Tuskegee, Ala.; Dr. S. S. Halderman, Portsmouth, O.; Dr. George Wm. Harrison, Bernalillo, N. M.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from December 28, 1889, to January 3, 1890.

By direction of the Secretary of War, the leave of absence granted First Lieut. Julian M. Cabell, Asst. Surgeon, in S. O. 249, A. G. O., October 25, is extended one month. S. O. 304, A. G. O., December 31, 1889.

By direction of the Secretary of War, par. 1, S. O. 180, Dept. of the Missouri, December 6, 1889, transferring First Lieut. Nathan S. Jarvis, Asst. Surgeon, from Ft. Lewis, Col., to Camp Wade, Kingfisher, Ind. Ter., is confirmed. Par. 6, S. O. 303, A. G. O., December 30, 1889.

By direction of the Secretary of War, the leave of absence granted Capt. E. A. Mearns, Asst. Surgeon, in S. O. 244, October 19, 1889, from this office, is extended two months. S. O. 303, A. G. O., December 30, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending January 4, 1890.

Medical Inspector Jno. H. Clark, ordered to the U. S. S. "Baltimore."

P. A. Surgeon Oliver Diehl, ordered to the U. S. S. "Baltimore."

Asst. Surgeon E. R. Stitt, ordered to the U. S. S. "Baltimore."

Surgeon Howard Smith, ordered to the U. S. S. "Alliance."

P. A. Surgeon J. D. Gatewood, ordered to the U. S. S. "Despatch."

Surgeon J. R. Tryon, ordered to the Naval Medical Examining Board.

Medical Inspector W. K. Scofield, ordered to special duty at New York City.

P. A. Surgeon D. M. Guitéras, ordered to the Naval Hospital, Philadelphia, Pa.

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ORIGINAL ARTICLES.

THE CLIMATIC CAUSATION OF CONSUMPTION.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889

BY HENRY B. BAKER, M D.,
OF LANSING, MICH

In order that one may be justified in bringing here an elaborate paper with extensive tables and illustrative diagrams, it is incumbent on the writer to make sure that he has either facts of importance which have not been published, or such new mode of grouping facts previously known as shall yield new and useful knowledge, especially when, as in this instance, the title of the paper is similar to that of other papers by the same person. Therefore I hasten to assure you that there are included in and with this paper facts which, so far as I know, have not been published, and others which have not in connection with this subject.[1]

This grouping of evidences on this subject has for its main purpose the learning whether three important generalizations relative to consumption are antagonistic to each other, as has commonly been supposed, or whether there are facts which serve to bind them together and harmonize them, and thus make each of the classes of facts upon which these generalizations are based tend to support a still wider generalization, which shall include all the preceding ones.

The general law to which I shall first give attention is the one established many years ago by Dr. Henry I. Bowditch, of Massachusetts, and nearly the same time in England by Dr. Buchanan. I refer to the generalization that residence on low, moist ground tends toward the occurrence of consumption.

Next in order, and in connection with the first, I shall deal with a generalization to which, during recent years, I have myself been asking attention. I refer to the proposition that exposure to the inhalation of cold dry air tends toward the production of consumption—that, in fact, this is a *controlling* cause of the disease.

Thirdly, the dominant generalization of our own time, that consumption has one *specific* cause, and that cause the *bacillus tuberculosis*, will be considered, or at least acknowledged.

At first thought these three propositions appear to be incongruous, and I think there is generally an idea that only one of them can be true; but I may here anticipate one conclusion in this paper by saying that it seems to me that each one of these propositions rests upon a secure foundation, and that as soon as this is accepted as established it will be possible to hold a much more complete and useful view of the causation of consumption than has previously been possible—a view which shall recognize the facts (1) that inoculation of a susceptible animal with the *bacillus tuberculosis* generally tends to cause consumption in that animal; (2) that, notwithstanding a wide dissemination of this specific cause, accidental inoculation with it, or its permanent lodgment in the human organism, is more favored under certain climatic conditions than under others; (3) that even after its introduction and lodgment in the organism, residence in cellar-like places tends to make the disease more fatal than does residence in more elevated, well-drained, warm and sunny places.

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[1] *List of Tables and Diagrams forming the Bases of the Evidence in this paper*
Table 1 and diagram 1—Croup, and temperature in Massachusetts
Table 2 and diagram 2—Croup, and absolute humidity in Massachusetts
Table 3 and diagram 3—Consumption, and temperature in Massachusetts
Table 4 and diagram 4—Small pox, and temperature in Massachusetts
Table 5 and diagram 5—Diphtheria, and temperature in Massachusetts
Table 6 and diagram 6—Pneumonia, and temperature in Massachusetts
Table 7 and diagram 7—Scarlatina, and temperature in Massachusetts
Table 8 and diagram 8—Temperature, and sickness from pneumonia in U S armies
Table 9 and diagram 9—Sickness from consumption in white troops, U S army, and temperature 1862-5
Diagram 10—Temperature, and deaths from phthisis in London, thirty years
Diagram 11—Temperature and sickness from consumption in Michigan
Diagram 12—Bronchitis and temperature in London
Diagram 13—Sickness from croup, and temperature in Michigan
Diagram 14—Temperature, and sickness from respiratory diseases in India, three years
Diagram 15—Sickness from influenza and temperature in Michigan
Diagram 16—Sickness from tonsilitis and temperature in Michigan
Diagram 17—Temperature, and sickness from bronchitis in Michigan
Diagram 18—Sickness from pneumonia, and temperature in Michigan
Diagram 19—Absolute humidity, and sickness from pneumonia in Michigan
Diagram 20—Pneumonia, and temperature in London, England
Diagram 21—Temperature, and sickness from scarlet fever in Michigan
Diagram 22—Deaths from small pox, and temperature in London England
Table 23 and diagram 23—Deaths from consumption in white troops in U S armies, and temperature
Table 24 and diagram 24—Sickness from diphtheria, and temperature in Michigan
These Tables and Diagrams will appear in THE JOURNAL of Jan 25 and Feb 1, 1890

It has been generally understood that there are influences associated with low and wet localities, and, by contrast, with high and dry localities, which it is especially important for mankind to learn and heed; and yet the systematic attempts to obtain a scientific knowledge of the nature of these influences, or even their extent, have been very few. Some years ago two prominent physicians, one in this country, Dr. Henry I. Bowditch, and one in England, Dr. G. Buchanan, almost simultaneously undertook to learn the influence of residence upon low, wet ground on that most important of all diseases, consumption. More recently Dr. William Pepper has attempted to collect the evidence on this subject throughout the State of Pennsylvania.

DR. BOWDITCH'S INVESTIGATIONS IN MASSACHUSETTS.

Dr. Bowditch has said that the two following propositions contain the essential points of his address on this subject:

First.—A residence on or near a damp soil, whether that dampness be inherent in the soil itself, or caused by percolation from adjacent ponds, rivers, meadows, marshes or springy soils, is one of the primal causes of consumption in Massachusetts, probably in New England, and possibly in other portions of the globe.

Second.—Consumption can be checked in its career, and possibly, nay probably, prevented in some instances by attention to this law.[2]

These lines of proof, or argument, are drawn from the following sources:

1. Massachusetts State registration reports.
2. Medical opinion of Massachusetts, as embodied in the returns made to me, as a committee of this Society, these returns consisting of written reports from resident physicians of 183 towns.
3. *Actual statistics of deaths from consumption*, received from such correspondents. Some of these statistics are but *incidentally* mentioned, while others are from towns, districted and carefully examined with reference to the relative prevalence of consumption in the different districts. In some of the most important of these the examination was made without my correspondent or myself being aware of the existence of any law such as that I shall present at this time.
4. [illegible] tain towns and of villages *in the* san[illegible] me of which consumption is quite pr[illegible] ers much less so, these differences [illegible] ost closely with corresponding differ[illegible] nt of moisture of the soil of said places.

[illegible] l-known houses which, in various towns, [illegible] the inhabitants and physicians to have [illegible] ed as the abode of consumption, and in [illegible] several *families* have been, during the past [illegible] off by the disease without the least sus[illegible] t of the occupants of the fatal position [illegible] s were placed.

[illegible] facts, statistics and opinions from [illegible] and New Hampshire.

[illegible] istics given in the report on the health of the United States army, strongly supporting the idea of the existence of the same law and the operation of it over the whole of the United States.

8. Results of my own practice since I first became convinced of the truth of the law, said results consisting of (*a*) statistics from my private medical record; (*b*) results actually derived from my choice of localities for consumptive patients, based on a belief in the law.[3]

DR. BUCHANAN'S INVESTIGATIONS, IN ENGLAND.

Dr. Buchanan's very important contribution to our knowledge of this subject is so well summarized by Dr. William Pepper, that it seems best to quote from him, as follows:

> The ninth and tenth reports of Mr. John Simon, Medical Officer of the Privy Council, *contain the results of* Dr. Buchanan's work, which was carried on in 1865, '66 and '67. Through this *investigation* it was discovered that in certain English towns where the drying of the subsoil had been accomplished by the construction of sewers, etc., and where the water supply had been improved, the mortality from phthisis had decreased. In Salisbury the death-rate from phthisis had fallen 49 per cent.; in Ely, 47 per cent.; in Rugby, 43 per cent.; in Banbury, 41 per cent.[4] *In* towns where no improvements had been made, or where the conditions were already good, there was no such corresponding change in the death-rate.
>
> Dr. Buchanan summarizes the facts brought out in his *investigation* of *phthisis in Surrey*, Kent and Sussex, as follows:
>
> There is less phthisis among populations living on pervious soils than among populations living on impervious soils.
>
> There is less phthisis among populations living on high-lying pervious soils than among populations living on low-lying pervious soils.
>
> There is less phthisis among populations living on sloping impervious soils than among populations living on flat impervious soils.
>
> This connection between the influence of soil and *phthisis was established by*—
>
> 1. The general agreement in phthisis mortality between districts that have common geological and topographical features that are of a nature to affect the water-holding quality of the soil.
> 2. By the existence of a general disagreement between districts that are differently circumstanced in regard to such features; and
> 3. By the discovery of pretty regular concomitancy in the *fluctuation of the two conditions from much* phthisis with much wetness of soil to little phthisis with little wetness of soil.[5]
>
> In his Tenth Report as Medical Officer, for 1867, Dr. Buchanan says:
>
> But the connection between wet soil and phthisis came out last year in another way, which must here be recalled —(*d*) by the observation that phthisis had been greatly reduced in towns where the water of the soil had been artificially removed, *and that it had not been reduced* in other towns where the soil had not been dried.
>
> 5. The whole of the foregoing conclusions combine into one—which may now be affirmed generally, and not only of particular districts—that *wetness of soil is a cause of phthisis to the population living upon it.*

Dr. Buchanan quotes from the Seventh Annual Report of the Registrar-General for Scotland, from which I extract the following:[6]

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[2] [illegible] 1862, p. 67.

[3] Med. Com. Med. Soc., Vol. x, No. 11, 1862, pp. 68–70.

[4] "Worthing, 36; Leicester, 32; Macclesfield, 31; Newport, 32; Cheltenham, 26. Bristol, 22; Dover, 20; Warwick, 19; Croydon, 17; Cardiff, 17; and Merthyr, 11;" *according to the Medical Officer*, page 15, Tenth Report Med. Officer of the Privy Council, 1867.

[5] Trans. Am. Climatolog. Assoc., May, 1886, N. Y., 1887, p. 89.

[6] Tenth Report Medical Officer, Privy Council, 1867, p. 109.

> Let us see how such an explanation would agree with the very different proportion of deaths from consumption which occur in the eight principal towns of Scotland. Taking a five years' average (1857 to 1861 inclusive), it is found that, supposing all these towns are brought to an uniform population of 100,000 persons, there died annually from consumption 206 persons in Leith, 298 in Edinburgh, 310 in Perth, 332 in Aberdeen, 340 in Dundee, 383 in Paisley, 399 in Glasgow, and 400 in Greenock. The fact is, that if each town had been arranged in the order of comparative dryness of its site, they would almost have arranged themselves in the above position—Leith and Edinburgh the most free from consumption, and also having the dryest sites; Glasgow and Greenock the most ravaged by that disease, and beyond all comparison situated on the dampest sites. The above fact, then, with regard to the towns, corroborates, in the most striking manner, the conclusions of Dr. Bowditch, and should be a valuable help to the sanitary reformers, as to the very important measures which it is their more especial province to carry out.[7]

Referring to the conclusions based upon these investigations by Drs. Bowditch and Buchanan, Dr. R. Thorne Thorne, in his "Progress of Preventive Medicine during the Victorian Era," page 51, says:

> I am aware that, in his sixth report (1879) on the Combined Sanitary District of West Sussex, Dr. Charles Kelly, basing his views on certain experiences derived from that rural area, has expressed a doubt as to the correctness of these conclusions. He says that the phthisis death-rate has been "distinctly lowered" in that district "in recent years," "while very little, if any, change has taken place during the same period in the drainage of the soil." Without entering into any criticism of some of the statistical data brought forward by Dr. Kelly in support of his views, I would here merely note, 1, that a large amount of agricultural drainage which had then already been effected throughout the kingdom would be expected to have produced a very similar result in rural districts to that brought about by sanitary drainage in towns; and 2, that Dr. Kelly offers no explanation of the definite and striking relations shown by Dr. Buchanan to have existed between the amount of diminution of phthisis death-rate and the extent and permanence of the lowering of subsoil water.

I have studied, with great interest, Dr. Kelly's "Sixth Annual Report," for West Sussex, published in 1880, as also one or two of his recent reports; and although I do not conclude that the facts and considerations he publishes controvert those published by Drs. Bowditch and Buchanan, they are of value, and especially in suggesting that coincidently with considerable progress in improved sanitary conditions of the surroundings, such as improved water supply, drainage, sewerage, etc., and improved methods of living, there has been apparently a great lessening of the mortality from consumption. Dr. Kelly says:

> The great difference in the amount of consumption is probably dependent upon several causes. The improved state of the cottages, the rise of wages leading to the children being better clothed and fed, the increase in railway communication, which tends to diminish intermarriage, and to cause more interchange of population —all these changes, social as well as sanitary, have had their share in the improvement.

In his Fourteenth Annual Report, page 188, Dr. Kelly says:

> It cannot be maintained that [all] deaths which used to be registered as phthisis are now included under lung diseases, because although there is an increase under the latter head, it is by no means equal to the decrease under phthisis.

Dr. Kelly, therefore, still claims that there has been an undoubted decrease of consumption in his jurisdiction.

Dr. Kelly's results reinforce the evidence heretofore collected, as to the influence of nearly all sanitary improvements in decreasing consumption, but they do not seem to me to have any force toward breaking down the evidence collected by Drs. Bowditch and Buchanan.

DR. PEPPER'S INVESTIGATIONS, IN PENNSYLVANIA.

Dr. Pepper's "Climatological Study of Consumption in Pennsylyania" seems to have been well planned, and carefully executed, but it did not yield results as convincing on the subject of the relation of soil moisture to consumption as did the investigations by Drs Bowditch and Buchanan, probably because of less perfect records of vital statistics in Pennsylvania, and perhaps also because of less attention having been given to the subject by local physicians in that State.

A few selections may be instructive:

> It will be observed at once that those portions of the State where phthisis is rarest are the most elevated, having a general altitude of 1,500 to 2,000, or, better still, of 2,000 to 3,000 feet; while, in proportion as we enter districts of lower general altitude, we find correspondingly increasing rates of mortality from consumption.[8]
>
> It may be noted that in Erie county, which has considerable average elevation, the mortality may be influenced by the proximity of the lake, and by the presence of a considerable body of low, wet land.
>
> It will be seen further on, in the more minute study we have been able to make of Philadelphia, that the influence of elevation and of density of population appears to be considerable, and in accordance with what we have above stated.[9]

Dr. Bowditch and Dr. Buchanan each gathered evidence, from several sources, the combined force of which was very great, and after their results were united their conclusions were irresistible. As they have never been successfully controverted, it seems probable that the laws which they formulated will stand as a secure foundation upon which we may safely build. Wm. Pepper, M.D., LL.D., the distinguished Provost of the University of Pennsylvania, has said:

> It is manifestly difficult to subject this theory to searching and conclusive investigation; but, so far as investigation has been made in other portions of this country or abroad, the evidence has tended to confirm Dr. Bowditch's position.[10]

But, if the grand truth, for which we are so much indebted to him, is really a truth, how comes it that the great reduction in consumption which should have followed its discovery has been as yet so little realized? There are, probably, several reasons, such as the slow progress which any such truth has in gaining acceptance, even among the thinking classes; but, in my opinion, one chief reason for the non-acceptance of, and for the non-action in accordance with this great discovery, was the fact that no one knew the *reason why* residence on or near low, wet soil was a prominent cause of consumption. The assertion and proof that this was a true law, when no one could imagine a reason why, has not led to its acceptance in such a hearty manner as to make it a strong factor in controlling the actions of residents of even New England. So that, although the death-rate from consumption in many parts of New England has steadily declined, it has not declined as fast as a knowledge of such an important general law as that propounded by Dr. Bowditch might have led one to expect; and it is with a feeling of sadness that one knowing this must now read the lines written by Dr. Bowditch over a quarter of a century ago, and which glow with lofty sentiments of manly enthusiasm. Not but that *his* work was well and nobly done, but the sadness comes because mankind is so slow to heed the warnings of its best prophets. Dr. Bowditch said:

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[7] Tenth Report Medical Officer, Privy Council, 1867, p. 110.

[8] Trans. Am. Climatological Assoc., May, 1886. New York, 1887, p. 98.

[9] Page 99.

[10] Trans. Am. Climatological Assoc., 1887, p. 88.

> When I revolved in my mind the possibility of this being an exact representation of a great truth, and then thought of the vast influence the thorough knowledge of it must have upon our professional practice, and of the beneficial effects upon public hygiene that would perhaps result, *in future*, from an intelligent obedience to it by the community at large, it was the happiest and most satisfactory moment of my professional life. I remembered that over twenty thousand[11] consumptive patients had died in Massachusetts during the previous five years. I asked myself these questions: Supposing this township represents the various townships of the State, and that they all have their varieties of soil, then if this township's statistics are true, and at least twice as many die in the wet as in the dry districts, may not similar results have occurred and perhaps be still occurring all over the State in which these twenty thousand human beings have been slain? Having arrived at this point, you will not be surprised at my asking, still further, this pregnant question: If our fathers and we had paid greater attention to this law, and we had always resided in dry localities, leaving the lower and moister for the purposes of business, perhaps, during the day, or for agriculture, should we not be saving over one thousand lives annually in Massachusetts, which are now foolishly sacrificed? These questions I then answered but imperfectly, but statistics since received, and of which I shall hereafter give you, I hope, more convincing examples, have only made me, each year, more firm in the conviction of the affirmative of these questions, at least in all their essential elements.[12]

The writer of this article accepts the evidence collated by Dr. Bowditch in Massachusetts, by Dr. Buchanan in England, and by Dr. William Pepper in Pennsylvania. I accept it because it seems convincing, because it has not been controverted, because it is in harmony with the several lines of evidence which I myself have collated, and because I think I know *why* it is true; and one chief object of the preparation of this essay is the hope that the reason why may be made plain, and that thereby the realization by mankind of the grand results aimed at by Dr. Bowditch may be aided.

In order to learn the reason for the truth set forth by Dr. Bowditch, let us first inquire what are the principal meteorological differences between high and dry localities, and low and wet localities.

CLIMATIC CHARACTERISTICS OF LOW AND WET, AND OF HIGH AND DRY LOCALITIES.

Atmospheric Pressure.—It is at once apparent that between "high" and "low" localities there is, of course, the difference in atmospheric pressure; but the difference in atmospheric pressure due to the few feet difference in elevation between the best and the worst localities studied by Dr. Bowditch could not have had great influence.

Atmospheric Humidity.—The next most noticeable element is the atmospheric moisture; and here, in my opinion, we strike the point from which our friends, in times past, have almost uniformly diverged from the path which would have led them to the truth. They have assumed, apparently, that a wet *soil* always tends to make a moist *atmosphere* over that soil, and although this is true if we speak only of the *relative* humidity (which is the per cent. of saturation of the air with vapor of water), it is not true if we speak of the *absolute* humidity (which is the amount of vapor of water which the air actually contains). Our predecessors have uniformly considered only the relative humidity, while, as I hope to show, it is mainly the absolute humidity that has influence in the air passages; for the reason that the air exhaled, having been in contact with the warm and moist surfaces in the lungs and air passages, leaves the body, uniformly, summer and winter, at about the same temperature—near 98° F., and nearly saturated with the vapor of water at that temperature. According to Glaisher's and Guyot's tables, air at 98° F., saturated with vapor, contains about 18.69. grs. of vapor in each cubic foot of air. This being so, the quantity of moisture taken out of the lungs and air passages in excess of that inhaled depends, not upon how nearly saturated with vapor the air may be when it is inhaled—not upon its relative humidity, because if saturated at zero it can contain only ½ gr. of vapor, at 32° only 2 grs., at 70° 8 grs., etc.—but the quantity of moisture exhaled in excess of that inhaled mainly depends upon the *absolute* humidity of the atmosphere. If air at zero, saturated with vapor, is inhaled, each cubic foot of it when exhaled will abstract from the lungs and air passages about 18 grs. of vapor of water.[13]

What are the important influences connected with the excessive exhalation of water from the air passages?

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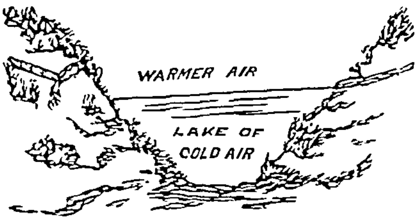
[11] In Registration Report, 1857, we find that during the five years including 1853 to 1857, 23,280 died of consumption in Massachusetts.

[12] Med. Com. Mass. Med. Soc., Vol. vi, Part ii, 1862, pp. 88, 89.

Atmospheric Temperature.—Before answering the foregoing question, however, let us fully understand why it is that residents over a cold *damp soil* are surrounded by an *atmosphere* which is cold and *dry*, absolutely, and which takes *out of the lungs* and air passages *larger* quantities of moisture than does air over a warm and dry soil. The main reason is that the atmosphere over low and wet soil is nearly always cold, as will presently be made apparent. And, as already pointed out, cold air is always, necessarily, dry air, so far as relates to the absolute quantity of moisture; although, because its capacity to hold moisture is slight, and because it has usually been cooled from a higher temperature, in which condition it held more vapor, cold air is frequently saturated with moisture —its *relative* humidity is great, but its *absolute* humidity is small. On the other hand, the atmosphere over high and dry localities is generally warmer, especially when the air is still (as it usually is at night), because then the cold air, being heavier than warm air, settles down into the valleys, and flows along water-courses, while the lighter warm air rises and remains on a higher plane. The sensations of any ordinarily sensitive person are sufficiently acute to detect the cellar-like atmosphere of the valleys and water-courses, on still evenings, when one goes down into them from the higher levels; and the sudden transition from such coolness to noticeable warmth is often very apparent to one who ascends directly from the low levels to a hill top.



A COLD VALLEY.

In speaking of a house in which a case of consumption originated, Dr. Bowditch described the locality as follows:

> On each side of this valley arise high and sandy hills. With each evening sunset, a flood of cold moisture, almost if not quite imperceptible to eyesight, but quite palpable to the sensitive skin of the traveler, settles in between the hills and gradually envelops this devoted house. I have often passed the spot late at night. At times the moon shone clearly on the immediately adjacent ridges, but as I descended from them and passed the house, the rays were obscured, and a chilly feeling came over me, as if taking a cold bath.[14]

While the sun shines, the valleys are frequently warm, and the valleys and low levels are frequently protected from winds, yet, as soon as the sunshine is withdrawn, the general law that warm air is lighter than cold air results in there being *generally* a lake of cold air in all basin-shaped localities, in there being streams of cold air flowing down[15] water-courses, and, generally, in the accumulation of cold air over every locality which is sufficiently basin-shaped that it retains water in or upon the soil. This is one reason why a low, wet place is generally cold. Another reason is that the evaporation of water produces cold, therefore, whenever the atmosphere is not fully saturated with vapor of water, a wet locality is for this reason colder than a dry one. This is one reason why underdraining a soil makes it warmer.

Frosts in Low, Wet Localities.—The fact that low, wet localities are generally cold is of such importance that I do not wish to slur it over, but to present sufficient evidence to make it conclusive. One line of evidence is that of the effect on tender vegetation. The fact that a "killing frost" occurs on low, wet places frequently when the uplands escape, is well known. It is also well known that, in districts where peach trees are grown, peach orchards on the hills frequently escape when those on the low lands are killed by the cold.

Thermometric Observations, on Low Lands.—Experiments made a few years ago by Prof. R. C. Kedzie, at the Michigan Agricultural College, *proved* that self-registering thermometers exposed on the high ground registered a higher temperature, by several degrees, than those exposed on adjacent low grounds; and that the cold air apparently flowed down the natural water-course through the grounds. Comparative observations made by Mr. W. C. Haines, at Lansing, Mich., prove that in a valley, along the bottom of which runs a small stream, a self-registering minimum thermometer (which had been compared with a standard instrument), generally shows the minimum temperature, even in winter months, to be lower than it is on the high ground in the State Capitol Square, in the same city, the difference in the *elevation* being only about 25 feet.

The Atmosphere at Low Levels is Coldest at Night.—The greater cold at low levels is most frequently at night; and it is worthy of note that it is *at a time when artificial heat is not usually employed;* and, although one may be warmly covered in bed, no method has been in very general use for the warming of the air inhaled under such circumstances, so that the lungs and air passages are more influenced by cold nights than by cold days.[16] Observations made for the Royal Meteorological Society of London, England,[17] at Boston, Lincoln-

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[13] If air at zero is warmed without being supplied with moisture, and then inhaled, its drying effects on the air passages will, of course, be the same as if breathed at the low temperature.

[14] Med. Com. Mass. Med. Soc., 1862, p. 93.

[15] If the wind is up stream, the flow of cold air may be up stream; but see results of Prof. Kedzie's experiments mentioned further on, under the heading: "Thermometric Observations on Low Lands."

[16] The curve for ozone at *night* in Michigan is almost precisely the same as the curve representing sickness from pneumonia.

[17] Quar. Jour. Royal Met. Soc., October, 1887, p. 275.

shire, 4 feet from the ground, and at 170, and at 260 feet from the ground in the church tower, and which the Secretary of the Society says are "superior to any observations heretofore made," show that—

> The *minimum* temperature at 4 feet is generally colder than at 170 feet, except in winter months, when the latter is generally colder than the former. . . . The mean temperature at 4 feet, during the day hours, is always in excess of that of 260 feet, the difference during the summer months amounting to about 4° at the warmest part of the day. *As night comes on the difference becomes less.*[18]
>
> The general results therefore show that the diurnal range of temperature is much less at the top of the tower and on the belfry than at 4 feet above the ground. . . .
>
> In foggy weather the temperature at the top of the tower is always warmer than at 4 feet, the upper part of the tower being generally free from fog.[19]

Fogs over Low Lands.—As illustrating the fact that fogs are most frequent over low, wet and cold levels, the remarks by the Secretary of the Royal Meteorological Society are applicable. He says: "The object of the Council in transferring the instruments to Lincoln was to obtain results from a differently situated place. The base of Boston Church was only a few feet above sea level, and the country round was very flat, while Lincoln Cathedral was situated *on a hill and was thus free from the ground fogs which so frequently occurred at Boston.*[20]

It is proper to state that Dr. Bowditch has said:

> While claiming dampness of the *soil* as *one of the prime causes of consumption in New England, I do not assert that it is the sole cause, or that the combination of changeableness and coldness with moisture, may not be vastly more fatal than moisture alone.*[21]

Hillsides are Warmer than Low Levels.—It will be seen by the careful student that Dr. Buchanan carried the investigation, or at least his exact summarizing, further than Dr. Bowditch did; and, although *he* has not taught us what there is about wet, low-lying soils that causes phthisis, he has supplied us with one very important generalization, namely: "There is less phthisis among populations living on sloping impervious soils than among populations living on flat impervious soils.[22] In the light of what has been pointed out in this essay, the reason for this now seems obvious—the sloping impervious soil permits the cold overlying atmosphere to fall into the valleys below, while the flat impervious soil not only retains its own cold atmosphere but tends to send up the slope its warmest air, and to take in exchange the coldest and heaviest atmosphere from the surrounding slopes. Although Dr. Bowditch did not in his summary clearly state the generalization that *sloping* impervious soils are not as dangerous as *flat* impervious soils, portions of his address show that he held it in mind, for he says:

> I believe that all towns, parts of towns, houses even that *rest on* damp, cold soils, are by that very fact liable to the prevalence of consumption. I believe that similar locations *near* wet meadows, rivers, marshes, etc., though less subject to the law, are nevertheless, in a lesser degree, promoters of consumption in the families resident thereupon. Even hills, with clayey subsoil retaining moisture, though not absolutely evil, are less good than a perfectly dry, porous soil, removed from any moisture.[23]

Again, in speaking of choosing a site for a dwelling-house, Dr. Bowditch says:

> It should be in a portion of the township which is neither so high as to be exposed to violent gusts of weather, nor so low that moisture will collect around it. Let it be on the side of a hill, or plain, open to the south, and, if possible, defended from the north and east, on a dry, porous soil, through which water freely percolates, and which, even after a rain, retains little moisture.[24]

SUMMARY: ELEMENTS OF CLIMATE CHARACTERIZING LOW, WET LOCALITIES.

Perhaps this part of the subject has now received sufficient attention to have established the points which it seems important should be understood, namely:

1. That the *atmosphere* over low and wet localities is *cold*, especially *nights* when, because of there frequently being no fires, the lungs and air passages are in most danger of injury, by the inhalation of cold air.
2. That the atmosphere in such localities is, more frequently than at higher levels, saturated with vapor of water, as shown by psychrometric observations, and also by the presence of fogs, etc., and, what is most important—
3. That, because the capacity of cold air to contain vapor of water is very small, the absolute quantity of water contained in the atmosphere in low, wet and cold localities is very small—the atmosphere there is cold and dry, absolutely.

EFFECTS ON LUNGS AND AIR-PASSAGES OF INHALING ATMOSPHERE OF LOW LEVELS.

Therefore, when such air as is usual on low levels is taken into the air-passages and lungs, containing, as it does, only a very few grains of vapor (air at zero containing at most only half a grain to each cubic foot), and is exhaled saturated with moisture at about 98° F. (each cubic foot of air then containing 18.69 grains of water), an excessive quantity of moisture is abstracted from the lungs and air-passages and an excessive quantity of the non-volatile salts of the blood (which pass into the air-cells from the blood with the fluid which normally keeps the air-cells moist), an excessive quantity of these salts is left in the air-cells and on the mucous lining of the air-passages. This is not stated on hypothesis alone, although this conclusion was reached *a priori* from causes known; but it has since been *proved* to be true by reliable and sufficient statistics of sickness and of coincident meteorological conditions, and by chemical analyses of the lungs and sputa. Thus, by abundant statistics I have proved[25] (and the evidence with this essay tends strongly to support this view) that at such times as pneumonia, bronchitis, influenza and other diseases of the throat, lungs and air-passages most prevail, the atmosphere is cold and dry (absolutely, although the relative humidity or per cent. of saturation may be great). Dr. Redtenbacher,[26] in 1850, and since him many another person, has shown that during the onward progress of pneumonia chloride of sodium, which is normally present, disappears from the urine. Lionel Smith Beale, M.B., has shown[27] by analyses that the chloride of sodium which, during the onward progress of pneumonia, disappears from the urine, is found in the sputa and in the solidified lung. It is therefore *proved* that just preceding the greatest prevalence of these irritative and exudative diseases of the lungs and air-passages the air inhaled is unusually dry, that the evaporation of moisture and, by inference, the quantity of non-volatile salts left thereby, is unusually great; and that, as proved by analyses, the chlorides are in the sputa and in the solidified lung in unusual proportion; that, notwithstanding the action of the lymphatics, these irritant salts accumulate there. The irritation of influenza, the bronchial cough, the exudation on the surface of the air-passages and sometimes into the air-cells, under such circumstances does not, therefore, seem wonderful. It seems now to be explained. Yet there is still more evidence connecting the presence of sodium chloride in the fluids which moisten the air-passages with the exudation of the albuminous constituents of the blood serum. Experiments by Brücke and afterward by Hoppe[28] have proved that although albumen will not pass through an animal membrane toward pure water, it will pass to a solution of salt; and Hoppe's experiments proved that the passage of the albumen is in proportion to the rapidity of the movement of the fluid.[29]

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[18] Same page—275. Italics mine.

[19] Quar. Jour. Royal Met. Soc., October, 1887, p. 277.

[20] Same Vol., p. 280. Italics mine.

[21] Med. Com. Mass. Med. Soc., Vol. x, No. 11, 1862, p. 90.

[22] Trans. Am. Climatol. Ass'n, 1886. New York, 1887, p. 90. The original is in paragraph 3, on page 109. Tenth Report of the Medical Officer of the Privy Council, 1867, London, 1868.

[23] Med. Com. Mass. Med. Soc., Vol. x, No. 11, 1862, p. 122.

[24] Page 124.

It would seem, therefore, that the more rapid the evaporation of fluid from the air-passages, and the faster the fluid is exuded toward the unusually strong solution of sodium chloride in the air-cells, the greater the proportion of albumen which will exude into the air-cells. This has an important bearing upon the causation of consumption, because it is quite a common belief, resting upon many observations, that consumption not infrequently follows exposure to taking "cold." Besides, from the work of Prof. R. Koch and others it seems that we must conclude that the introduction into the body of a susceptible person of the *bacillus tuberculosis* is generally followed by tubercular consumption. Therefore, as an albuminous exudate on an irritated or inflamed surface in the air-passages, maintained at the temperature of the human body, supplies a "culture fluid" and temperature conditions which are well known to be favorable to the reproduction of the *bacillus tuberculosis*, it follows that exposure to the inhalation of those bacilli at such times as such an exudate is present in the air-passages must lead to a larger than the average proportion of instances in which such bacilli are enabled to gain a successful lodgment in the air-passages. And since it has been proved that inoculation with the *bacillus tuberculosis* in other parts of the body is not infrequently followed by tuberculosis of the lungs, it seems to follow that the bacilli are caused to exude into the air-passages (brought there from tuberculous foci in other parts of the body); and it would seem that they would be most likely to be exuded, and, if exuded, to maintain a lodgment there at such times as exudation into the air-cells or air-passages is greatest. Therefore, consumption of the lungs should be contracted most readily at such times as croup, influenza, bronchitis and pneumonia occur. Let us examine the evidence of our vital statistics, in order to ascertain whether or not this hypothesis is in accordance with the facts.

DO IRRITATIVE, EXUDATIVE DISEASES OF THE AIR-PASSAGES AND LUNGS ACCOMPANY OR PRECEDE CONSUMPTION?

At the outset we are met with the difficulty that in most States and countries no sufficient statistics of *sickness* are recorded; but inasmuch as the same course of reasoning, as to the favoring of the reproduction of the bacilli in the lungs and air-passages by the occurrence of a saline and albuminous exudate, will apply to the later stages of consumption as well as to the first, it follows that the *deaths* also from consumption should be most frequent following the occurrence of those conditions which cause the exudative diseases of the air-passages.

For the purpose of answering the above question, and to supply the evidence on which this essay is mainly based, twenty-four tables and twenty-four diagrams, accurately drawn to scale and graphically exhibiting the essential facts contained in the tables, are submitted herewith. The first seven tables and diagrams show the relations which the deaths reported from consumption and from each of several diseases in Massachusetts sustain to those from each of the other diseases and to the atmospheric temperature. And since the absolute humidity of the atmosphere is so greatly controlled by the temperature, and the curve for absolute humidity in this part of the world, as shown by a comparison of it in diagram No. 2 with the curve for temperature in diagram No. 1, is almost the same as the curve for temperature, the several diagrams also show, to whomsoever will hold these facts in mind, the relations of the deaths reported from the several diseases to the *absolute humidity* of the atmosphere. For one disease, croup, diagrams 1 and 2 illustrate these relations fully.

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[25] Proceedings Mich. State Board of Health, Oct., 1886, pp. 7-11; Trans. Am. Climat. Assoc., May, 1886, New York, 1887, pp. 226-233; Mich. State Board of Health Report, 1886, pp. 246-324; 1887, pp. 197-211; 1888, pp. 145-169.

[26] Zeitschrift der K. K. Geselschaft der Aertze zu Wien, Aug., 1850.

[27] Trans. Medico-Chirurg. Soc., Vol. xxxv, 1852.

[28] Virchow's Archiv, Vol. 9, 1856, pp. 245-268.

[29] Virchow's Archiv, Vol. 9, 1856, pp. 265-267.

In studying the relations of the several diseases it should be borne in mind that the average *duration* is not the same for all; therefore, it cannot be expected that there would be exact uniformity—that the time between the exposure to the cause and the fatal result shall be the same for all diseases. Bearing this in mind, an examination of the several diagrams shows that these diseases sustain such relations to the temperature and absolute humidity of the atmosphere as to indicate that these conditions are causal.

A very noticeable departure from quantitative relations—the same in different parts of the year—is to be seen in the diagrams relative to croup, consumption and diphtheria, and is slightly apparent in the curves relating to small-pox. It is a *lower* curve than proportional in those months when the atmosphere is becoming more warm and moist, and a *higher* curve in those months when the atmosphere is constantly becoming cold and dry. It is as if those who were injured by a very cold dry air do not die if warmer weather ensues, and those taken sick in comparatively warm weather die in unusual proportion in the autumn months, as the weather constantly becomes colder and drier. This is strongly marked in diagram No. 3, relating to consumption. In that diagram, considering the fact of the general relations of the two curves, there are also hints that possibly consumptives guard against exposures more successfully in the coldest months. It is quite possible, and I think probable, that these statistics of deaths from consumption in Massachusetts in recent years are modified by the great numbers of consumptives and persons with susceptible lungs who leave that State in the autumn and do not return from their southern trip until spring. This becomes more apparent when one compares diagram No. 3 with diagrams exhibiting the curves for consumption in some other parts of the world, although the same principles seem to hold, to some extent, in most cases; but in the diagrams of deaths and of *sickness* from consumption in the United States armies during the war of the rebellion it is much less apparent than it is in the diagram (No. 3) relative to deaths in Massachusetts.

Turning now to the more extensive mortality statistics in London, England, it is seen, by a glance at the several diagrams (diagrams 10, 12, 20, 22), that the curves for the diseases of the lungs and air-passages follow the curves for atmospheric temperature with such uniformity as to indicate quantitative causal relations. That the curve for consumption in London (diagram No. 10) does not fall so noticeably as it does in Massachusetts in the winter months, may be, in part, due to the fact that the statistics extend back to a time when journeys southward in the autumn were not so much the custom as at present.

The diagrams show that in London the deaths from consumption do follow, from one to three months later, the deaths from bronchitis and pneumonia.

Tables and diagrams 8, 9 and 23 exhibit the facts respecting the rise and fall of the *sickness* from pneumonia and consumption, and the *deaths* from consumption in the United States armies during the war of the rebellion. The statistics are quite extensive, and as they exhibit the facts relative to the sickness as well as the deaths, they are especially valuable. It will be seen that the sickness and the deaths from consumption do in general follow the sickness from pneumonia; also that the sickness from pneumonia follows the changes of atmospheric temperature with such closeness and regularity as to show that, directly or indirectly, the temperature sustains causal relations.

That the control of diseases of the air-passages by atmospheric temperature is not confined to this country and England, but applies also to countries having very much warmer atmosphere, is proved by the table and diagram No. 14, which show that in India the diseases of the air-passages (not including consumption) are controlled by the temperature.

Finally there are submitted herewith tables and diagrams (Nos. 15 to 21 inclusive) proving that in Michigan (in which State valuable statistics of *sickness* are collected) the *sickness* from nearly every one of the entire class of diseases of the air-passages and lungs is controlled by the atmospheric temperature, and that the sickness from consumption follows, in general, the law which has herein been pointed out.

In all the countries, States, cities and armies concerning which I have thus far studied the statistics relating to this subject, the same law seems to hold: a very considerable proportion of the *sickness* and the *deaths* from consumption follow, or sustain such relations to, the irritative and exudative diseases of the air-passages and lungs as to prove a necessary or causal relation; and these other diseases of the air-passages and lungs are quantitatively related to the temperature and absolute humidity of the atmosphere, proving that, directly or indirectly, they are controlled by these atmospheric conditions. I have pointed out how, in my opinion, this occurs, namely, indirectly through the absolute humidity of the atmosphere, which, so far as its maximum is concerned, is absolutely controlled by the temperature, cold air being always necessarily dry air.

Nor is this all of the evidence. As elsewhere pointed out, it is proved that the deaths from small-pox follow the same law, as should, theoretically, be the case, because the same remarks, as to the saline and albuminous exudate in the air-passages at the temperature of the body being the best possible "culture fluid" and temperature conditions for the specific cause of consumption, apply as well to the specific cause of small-pox. Therefore, the accompanying tables and diagrams (4 and 22) on this subject are submitted in this connection.

The fact that small-pox and other diseases known to be communicable and to enter the body by way of the air-passages are in great part controlled by the atmospheric temperature, as is shown by diagrams 4, 5, 7, 22 and 24, is, by itself, strong presumptive evidence that such a disease as consumption, a disease in which also the specific cause is believed frequently to enter the body by way of the air-passages, will be controlled by similar atmospheric conditions.

A comparison of diagrams 10 and 22 shows that the curves for deaths from small-pox and consumption in London, England, are almost identical. This must have come about through the inhalation of cold air, which led to irritations and exudations in the air-passages and lungs, and thus favored the contraction of both of these diseases; but, inasmuch as otherwise we would admit that the average duration (of the periods of incubation and of the diseases) was the same in both diseases, it would seem to be proved that the progress of the *later* stages of consumption also is influenced by the irritation and exudations caused by the inhalation of cold air. How this is possible has already been explained.

A LARGE PROPORTION OF THOSE WHO HAVE CONSUMPTION RECOVER.

That there are conditions under which human beings recover from consumption seems to be well proved by many observers. Dr. H. P. Loomis, of New York, is recently reported to have stated that "in no less than 60 per cent. of all patients dying at Bellevue Hospital there were old tubercular changes in the lungs, the disease having been recovered from."[30]

If 13 or 15 per cent. of all deaths are from consumption, and 60 per cent. of those who die of other diseases have had consumption, or at least "tubercular changes in the lungs," from which they have recovered, it would appear that the specific cause gains a lodgment in 73 per cent. of all persons, and proves fatal in only about 13 or 15 per cent. of all persons. This has an important bearing upon the view that the *bacillus tuberculosis* is the only cause which it is worth while to study. A recent writer, speaking of tubercular phthisis, said: "In the autopsies made at the Philadelphia Hospital it is surprising to see the almost universal presence of this disease, in a more or less active state, in patients dying from other affections, such as Bright's disease or carcinoma.[31]

Dr. E. L. Trudeau, of Saranac Lake, N. Y., has said:

> Vibert recently, while making 131 autopsies at the Paris morgue on persons who had come to their death by violence while apparently in good health, noted in twenty-five—that is, in more than nineteen per cent.—the presence of some slight tubercular lesion. In seventeen of the twenty-five a few calcarious and fibrous nodules remained as the only evidence of an unsuspected and arrested tubercular process, but in none were the pathological changes in the lungs extensive. Recovery often follows the operations now undertaken for tubercular peritonitis, though it is evident that all the infectious material cannot be removed.
>
> The records of the autopsies made by Vibert, Councilman and others, as well as the evidence offered by the present research [Dr. Trudeau's experiments on the influence of environment on consumption], furnish proof that the tissues themselves can, under certain conditions, either limit the destructive action of this microbe [*bacillus tuberculosis*], or even entirely rid themselves of its presence.[32]

The experiments by Dr. Trudeau on the influence of environment on the course of tubercular disease artificially induced by the inoculation of animals (published in the "Transactions of the American Climatological Association" for 1887 and 1888) have demonstrated, apparently, that something similar to what has been set forth by Drs. Bowditch and Buchanan as true of the influence of climatic environment on mortality from consumption in the human species, is true relative to animals. Rabits inoculated with the *bacillus tuberculosis* and kept in a cellar-like place on restricted diet, died of the disease in much greater proportion than did similar animals similarly inoculated but kept in the open air with abundance of food. Under such favorable conditions a large proportion of the animals recovered so far, at least, as to maintain good health, although the local infection was not destroyed, but only circumscribed.

THE CAUSATION OF CONSUMPTION IS COMPLEX.

It seems to be difficult for the human mind to grasp more than one idea at a time. Accordingly we find a strong tendency to assume that there is and can be but *one* cause or essential condition leading to consumption; but nothing is more certain than that the forces and reactions in nature are complex, and to me the evidence is conclusive that the causation of consumption is complex. But, although complex, I believe the problem is now quite within our grasp, in all its most important features, if we only hold fast to the truths we have learned of the relations of consumption to low, wet places, while we grasp the obverse idea of the favorable influences of high, dry and sunny places; hold fast to this double image of one great truth, while we lay hold of that one which teaches us the great importance of proper clothing, food and all that goes to make the nourishment of the body fully equal to all demands upon it; hold fast to this rather complex thought while we grasp the great truth which Dr. Robert Koch has given us, that there is a specific cause which *under favoring circumstances and conditions* is an essential factor in the causation of consumption; and, while holding all this in mind, I ask you to consider how it is that this specific cause usually enters the body, and the fact that just as the specific causes of many other diseases (as is proved by the statistics of sickness and deaths which I present to you at this time), just as they enter and cause the disease in proportion to the coldness and dryness of the atmosphere, so the specific cause of consumption apparently and probably finds lodgment in the lungs and air-passages, other things being equal, in proportion to the coldness and dryness of the atmosphere; and not only this, but the danger of auto-infection and of death to one in whose body the disease is already present is increased by exposure in an atmosphere unusually cold and dry, while the condition of the blood is such that saline and albuminous exudates are liable to occur in the air-passages.

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[30] Jour Am. Med Assoc, May 18, 1889, p 718

[31] J H Musser, M D, reported in the Medical and Surgical Reporter, Philadelphia Jan. 26, 1889, p 102

[32] Trans Am Climatolog Assoc., 1888, pp. 93–94

Finally, in order to grasp the most at once, we need to link the facts together, realizing the fact that over the low *wet soil* there is generally a *cold, dry atmosphere*, thus making it plain that the facts observed and collated by Drs. Bowditch and Buchanan are entirely in harmony with those observed by Dr. Koch, and with the enormous numbers of facts which I have tabulated, and which prove beyond question that there is a causal relation between the inhalation of such an atmosphere and the occurrence of all the ordinary diseases of the air-passages and of those communicable diseases which enter by way of the air-passages, including tubercular consumption.

ONE RELATION OF STATISTICS OF CONSUMPTION TO STATISTICS OF TEMPERATURE.

By Diagram No. 10, it may be seen that in the City of London during thirty years the fluctuations in the number of deaths from phthisis followed the fluctuations of temperature, nearly as constantly as a shadow, rising and falling, not with but after the temperature changes. In the month of September (following the most favorable temperature in July) the deaths reach the lowest point—an average of 232.4 per week. If the temperature had continued thus favorable throughout the period, it is reasonable to believe that the deaths for each month would have remained the same—an average of 232.4 per week, or 6,884.8 per year, amounting to 206,544 deaths during the period of thirty years. Deducting this number from the number of deaths which really occurred, 231,036, leaves 24,492 as the number of deaths indicated to have been produced by the temperature changes shown in the diagram. Had we records of the temperature, and of the deaths from phthisis for smaller divisions of time, for each day, for instance, it seems to me probable that the fluctuations of temperature would be seen to have sustained a causal relation to a large proportion of the deaths from phthisis, even in the most favorable month. Unfortunately, such perfect records are not available. But the material was originally compiled by weeks, and during the fourth week of September the deaths were only 130, or 2.4 less than the average for that month, apparently responding to a rise of temperature which occurred eight weeks before—the usual difference of time between the fluctuations of temperature and those of the deaths. Substituting this 130 (deaths) for the 132.4 used in the above calculations, gives 28,236 deaths as due to the *weekly* fluctuations of temperature, or 3,744 more than by the *monthly* records. If dividing the unit of comparison (one month) by 4 shows 3,744 more deaths produced by the fluctuations of temperature, what would dividing by 30, or a comparison of observations by days, show? We do not know absolutely; but by analogy we are led to believe that accurate records of the temperature and of the deaths from consumption would show that a large proportion of the *deaths* from phthisis were quantitatively related to atmospheric temperature.

Yet this relation would necessarily be obscured by the greater power possessed by some patients than by others to resist the inroads of consumption. For, on account of the varying duration of the disease, the deaths, instead of always occurring at the same interval after the exposure to the primary cause (cold and contagium), are scattered along according to the virulence of the contagium and the resisting power of the patient, thus grading down the elevations and filling up the depressions in the curve representing deaths from phthisis until it approximates a horizontal line showing only surface fluctuations corresponding with the temperature fluctuations.

The fact that the diseases of the lungs and air passages and the communicable diseases which enter by way of the air passages are later than the exposure to cold by a time equal to the average duration of the disease and the period of incubation, is shown by the diagrams which I present. Thus the maximum sickness from influenza, tonsillitis and croup is in the same month as the greatest exposure to cold, while pneumonia follows one month later, and, according to the most complete statistics, shown in Diagrams 10 and 22, the changes in the deaths from small-pox and consumption follow at a period of about two months after the temperature changes.

I believe that if the average duration of consumption was as uniform as is the average duration of small-pox, the proportion of the deaths which would be seen to be quantitatively related to the atmospheric temperature would be as great with consumption as with small-pox; and, as may be seen in Diagram No. 22, there were twice as many deaths from small-pox following the coldest season of the year as there were following the warmest season.

THE CAUSATION OF CONSUMPTION—SUMMARY.

In order that mankind shall be able to prevent or avoid the causes of consumption, it seems essential that its causation should be understood. It would seem that we are now in possession of sufficient knowledge of its causation so that, if we will but act upon that knowledge, a large proportion of the sickness and deaths from this most important of all diseases, may be prevented. What are the generalizations which supply the bases for effort for the prevention or avoidance of consumption? They seem to be about as follows:

1. Microscopic organisms called bacilli, of a species known as *bacillus tuberculosis* (Koch), accompany the disease commonly known as consumption.

2. Introduced into a *susceptible* organism, *bacillus tuberculosis* is able to reproduce, and, apparently, to cause and continue the condition known as consumption.

3. These bacilli are present in the sputa of consumptives; and, although outside the body at ordinary low temperatures they do not multiply by reproduction, they are not destroyed by drying, and, consequently, in apartments occupied by consumptives who do not take care to so dispose of the sputa that they shall not become a part of the dust of the room, the dust may contain the bacilli, or their spores. Because so large a proportion of people have consumption, the dust of halls and public places where sputa reach the floors and may become a part of the dust of the room, such dust may contain these bacilli, which are believed to be the *specific* cause of the disease.

4. The bacilli of consumption are introduced into the body in various ways; but, apparently, most frequently by way of the air-passages. (The order of the invasion of the lobes of the lungs is tolerably well understood.)

5. Statistics of sickness, and of deaths, collated with meteorological statistics, seem to prove that the consumptive processes go on most actively after times of low atmospheric temperature, and least actively after times of high atmospheric temperature. It would seem that atmospheric temperature is, directly or indirectly, a *controlling* cause of consumption.

6. Statistics of sickness and of death from consumption, collated with statistics of sickness and deaths from other diseases, prove that, in the long average, consumption is somewhat uniformly preceded in time and place (and inferentially in the same individual, by one of these diseases), by the irritative and exudative diseases of the lungs and air-passages, such diseases as influenza, tonsillitis, croup, bronchitis and pneumonia generally preceding, in the same locality, the occurrence of recognized consumption; they are, apparently, conditions antecedent to consumption.

7. Statistics of sickness and of deaths, collated with meteorological statistics (Seibert, Baker), prove that the irritative and exudative diseases of the lungs and air-passages follow uniformly and quantitatively, in their rise and fall, the fall and rise of the atmospheric temperature, indicating that, directly or indirectly, atmospheric temperature is a *controlling* cause of those diseases.

8. The accumulation of non-volatile salts (chlorides) in the sputa and solidified lung in pneumonia (Beale), coupled with the fact of the disappearance of the chlorides from the urine during the onward progress of pneumonia (Redtenbacher), collated with statistics of sickness, of deaths and of meteorological conditions, and with certain facts in physiology (Brücke and Hoppe), pathology (Stokvis), and chemistry, seem to prove that the control which atmospheric temperature has of pneumonia (and, if of pneumomonia, also its control of all those irritative and exudative diseases of the lungs and air-passages, which it does control), is not direct, but indirect through its well-known control of the atmospheric humidity, and so of the quantity of water exhaled from the lungs and air-passages, influencing the quantity of non-volatile salts which may there accumulate.

9. Residence in low, wet localities tends toward the causation of consumption, and toward the fatality of the disease (Bowditch, Buchanan, Pepper, Trudeau), because in all such localities the atmosphere is cold, and consequently its absolute humidity is small. Other concomitant conditions may contribute — greater atmospheric pressure, greater daily range of pressure, greater daily range of temperature, more active oxidation, less tendency toward deoxidation than occurs under free exposure to sunlight, lack of sufficient nourishing food, etc.

10. Among causes known, or believed, to be *predisposing* to consumption, are: heredity; temperament (certain types of auburn-haired persons being supposed to be especially liable to consumption); narrow lymph-spaces in the connective tissue (Formad),[33] possibly because of their more readily clogging up by saline, albuminous or fibrinous exudations; and excess of such non-volatile salts as sodium chloride in the food or drink.

THE PREVENTION OF CONSUMPTION.

We come now to the most important utilitarian question connected with this subject,—What can be done to lessen the ravages of this most destructive disease?

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[33] Jour. of Am. Med. Ass'n, Vol. 2, p. 148.

It is gratifying to be able to say that, if we accept the evidence collected in this essay, much can be done; and that there is promise of the prevention of a very large proportion of the sickness and of the deaths from consumption, through the adoption of measures which are not difficult, yet which require, for their most speedy and complete accomplishment, such an amount of coöperation by all classes of people as can only be secured through the faithful labors of intelligent boards of health, or of some agency for the thorough dissemination of the truth respecting this disease and the means for its avoidance, restriction, prevention, and climatic and other treatment. It is still true as written in the Bible—"My people are destroyed for lack of knowledge."[34] When once the people know, fully, how and why consumption is caused, they will find and adopt rational methods of protection from that disease.

PREVENTIVE MEASURES.

1. Having in mind the foregoing generalizations, numbered 1, 2, 3, 4, relative to the supposed *specific* cause of consumption, it would seem to be practicable to so enforce, upon the minds of the people generally, the importance of the destruction or the disinfection of all sputa from consumptives, that the present very general distribution[35] of those microörganisms shall be very greatly lessened.

The consumptive might carry small pieces of cloth, each just large enough to properly receive one sputum, and paper envelopes or wrappers in which the cloth may be put as soon as once used, and with its envelope burned on the first opportunity.

2. What has been said about the destruction or disinfection of the sputa of consumptives should apply also to the dejecta; because it has been shown (by Friedländer[36]) that the bacilli are to be found in the urine of persons with tubercular disease of the urinary organs, and in the fæces of those with tubercular disease of the bowels, and they may be in the fæces of those who swallow sputa containing the bacilli, that is, possibly, of any consumptive.

Through better systems of ventilation, much may be done for the lessening the number of microörganisms inhaled with the dust of floors, carpets, etc.; especially by having the foul air exits at the floor-level, so that the general motion of the foul air shall be downwards, and not upwards into the nostrils of the inmates of the room. A more liberal supply of fresh air to all occupied apartments, especially public rooms, would lessen the danger of inhaling air which has already been breathed, and also of microörganisms, etc. So long as the specific cause of consumption is so widespread, lives may probably be saved by the use of respirators by those who sweep and dust rooms which consumptives have occupied.

3. Generalizations Nos. 5 and 7 make it important that consumptives, and persons susceptible to consumption; should especially guard against the inhalation of cold air. It enforces the importance of having such persons spend the winters in a climate warmer than that to which they have been accustomed.

4. Generalization No. 6, in connection with Nos. 1, 2, 3 and 4, teaches us that it is important that every person suffering from one of the irritative or exudative diseases of the lungs or air-passages, should be especially protected from the inhalation of the bacillus tuberculosis.

5. Generalization No. 8 enforces the importance of supplying moisture to all air which requires to be warmed, in hospitals, houses, public buildings, and wherever the temperature of the air can be controlled.

6. Generalizations Nos. 8 and 10 teach us that it may be of very great importance to see that our food and drink, especially in winter, shall not contain an excess of chloride of sodium or other non-volatile salt liable to be exuded into the air-cells or air-passages, and left there by unusual evaporation of vapor through the inhalation of cold air, which is necessarily dry, or of air which has been warmed without the addition of moisture.

6. Generalization No. 9 has been previously commented on, and some of the advice based upon it by Dr. Bowditch has been quoted. But his results have been so well upheld by Drs. Buchanan and Pepper, and by the experiments of Dr. Trudeau, that since we now think we know the reason why residence over low, wet soil endangers health and life from consumption, there should be no hesitation in acting in accordance with the laws laid down by Dr. Bowditch, relative to the avoidance of residence over low, wet soil, and in any cellar-like place.

8. In addition to what is generally known for the prevention of small-pox, diphtheria and scarlet fever, the facts incidentally set forth in this essay teach why it is that the inhalation of cold, dry air is an important factor in the causation of those diseases, and why it is even more important in winter than in summer to guard people from them.

9. Finally, there is given herein evidence as to the causation of a large class of ordinary diseases (of the lungs and air-passages), which should lead to the prevention of a very considerable proportion of the sickness and deaths therefrom.

That there shall be a very thorough dissemination of the truth, or at least of the nearest approach to the truth that is now known, respecting these subjects which are of vital consequence to every man, woman and child, and that, through the attention to such subjects which shall result from such thorough dissemination, many valuable lives may be saved, and much suffering and sorrow may be prevented, is the earnest wish of the author of this essay.

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[34] Hosea, Chapter IV, verse 6.

[35] Dr. James E. Reeves, ex-Pres. of the Am. Public Health Association, demonstrated the presence of innumerable tubercle bacilli in a sputum on the sidewalk, near the post office in Wheeling, W. Va. They are probably to be found on the sidewalk in every city.

[36] Manual of Microscopical Technology, pp. 219, 236, 237.

PELVIC ABSCESS IN THE FEMALE.

Read in the Section of Obstetrics and Diseases of Women at the Fortieth Annual Meeting of the American Medical Association, June, 1889

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I use this term in its comprehensive and generic sense as indicating the location of pus within the pelvis, and I object to its limitation to pus within the extraperitoneal lamina of areolar tissue. I cannot appreciate the propriety of applying so comprehensive a term as pelvic abscess to an accumulation of pus in the pelvic areolar tissue, inasmuch as modern pathology teaches us that the latter condition is a rare one compared with the formation of pus in other locations within the pelvis. I shall not speak of abscesses within the sheath of the psoas or iliacus muscles, nor of perityphlitic abscess—for these conditions pertain more to general surgery and are common to both sexes. The rarer forms of uterine parenchymatous abscess and of intra-pelvic abscess arising from disease or injury of the pelvic bones I shall also pass by.

I will give three subdivisions of pelvic abscess in the female, namely, areolar abscess; intra-tubal and ovarian abscess; and intra-peritoneal abscess. To one or other of these subdivisions belong the very large majority of intra-pelvic pus formations.

Until recent years pelvic cellulitis was deemed of very frequent occurrence, and consequently abscesses of the pelvic areolar tissue was believed to be by far the most frequent form of abscess within the female pelvis. Modern abdominal surgery has, however, demonstrated the fallacy of such convictions, and it is now known that inflammation of the pelvic areolar tissue or pelvic cellulitis is of only occasional occurrence, and there cannot be a shadow of a doubt that very many cases formerly diagnosticated and treated as abscesses of the pelvic areolar tissue, were accumulations of pus, either within the Fallopian tube, the ovary, or the peritoneal cavity. In fact so much more frequently do the other forms of pelvic abscess occur, that to-day some busy operators would seem almost to doubt the occurrence of pus within the pelvic areolar tissue. But such a conclusion would be equally as erroneous as it was in the past to look upon areolar abscess as the ordinary if not the only form of intrapelvic pus formation.

I have seen a number of areolar abscesses; in some of these cases the location of the pus was demonstrated in an autopsy, in others by a laparotomy and subsequent extra-peritoneal operation, while in still other instances the history and progress of the case justified the diagnosis. This form of abscess is a result of acute areolar inflammation, and is usually a sequel to labor, but may arise because of traumatism of the cervix vagina or external genitals. Doubtless septic infection of the local lymphatics, or more rarely of the veins precedes the abscess. The local septic infection arises from a failure to preserve an aseptic condition of the parturient canal either during or subsequent to labor, or in connection with operations on the external genitals, the vagina or the uterus.

I have never met with an areolar abscess dependent upon extension of gonorrhœal inflammation from the vagina or uterus directly through the walls of those organs into the pelvic areolar tissue. However I am not prepared to deny the possibility of such an occurrence by means of the lymphatics in very rare instances. Suppuration of a pelvic gland may arise as a result of chancroids of the genitals, and a secondary areolar abscess may form, but this must be also of rare occurrence.

Areolar pelvic disease is not infrequently the result of a hæmatoma—the contents then consisting of pus intermixed with degenerated blood elements. Chronic pelvic cellulitis occurs only as a sequel to some of the complications of pelvic abscess. When fistulous tracts persist after the escape of pus into the intestinal canal, or into the bladder or in some other direction; or where degeneration and partial suppuration of a pelvic gland occurs, then pelvic cellulitis becomes chronic. But chronic cellulitis without such complication as a constant cause is a gynecological myth—and has existed only as an *ignis fatuus* in the brains of former members of our profession, or of those of to-day who hug the delusions of the past. The abdominal surgeon has demonstrated in innumerable instances that chronic cellulitis has no independent existence.

Intra-tubal and ovarian abscess frequently coexist. In fact, ovarian abscess when existing, is usually a sequel to and dependent upon tubal disease. They are closely related as to causation, course, prognosis and treatment. I have seen but one instance of an ovarian abscess without an associated pus formation in the tube. In making this statement I do not refer to suppurating ovarian cysts. Bernutz long ago described the disease of the uterine appendages, but it was the abdominal surgeon of recent days who demonstrated the frequency of such diseases and especially the frequency of occurrence of pyosalpynx. That intratubal abscess occurs with very much greater frequency than areolar abscess, must be apparent to every one familiar with recent abdominal surgery. The enucleation and removal of a distended tube containing several ounces of pus from a mass of adherent viscera and inflammatory exudate with cure of the patient is a convincing argument that the most skeptical have not been able to resist. However there are instances in which the pus accumulation has become so large, and the alteration of the tube wall so great, and its blending with other viscera or tissues so intimate, that it is quite impossible for the operator to determine the starting point of suppuration without an extent of dissection incompatible with the possible safety of the patient.

The obscurity of the origin of such extensive pus formations is rendered greater by the fact that associated with pelvic areolar abscess may also coexist extensive plastic inflammation of the pelvic peritoneum. Upon this obscurity rests in part the difficulty of determining the relative frequency of areolar and tubal abscess. As in past years cases of tubal abscess were unwittingly called areolar abscess so, to-day, it would seem that areolar suppuration with adhesions is liable in some instances to be pronounced intratubal abscess even after the abdomen has been opened.

The term pyosalpynx is indicative of the location of the pus, but it does not convey an idea of the extent of inflammatory exudation and adhesion of viscera in which the pus tube becomes imbedded. After these adhesions have been established the amount of pus that forms in the tube is sometimes very great, amounting in rare instances to several pints. This large mass of inflammatory exudate and of viscera matted together with the enclosed pus accumulation is not properly designated by the term pyosalpynx. It is a form and the most frequent form of pelvic abscess.

Intratubal abscess is dependent in the large majority of cases on an extension of gonorrhœa into the tube. There may not be ascertainable a distinct history of gonorrhœa in the patient, but the confession of the husband usually will throw the necessary light on the causation. He will give a history of chronic gonorrhœa dating back sometimes several years to its acute origin.

The wife in most instances will state that she has not been well since her marriage, several months or several years previous, and she has been suffering with salpingitis and ovaritis prior to the accumulation of pus. This association, in nearly all cases, of pyosalpynx with a history of gonorrhœa would seem to point unmistakably to the causation. The discovery of the gonococcus removes all doubt as to the nature of the cause. In many cases the gonococcus has not been discovered and then only the history of the case can serve us in tracing the process to its origin.

When abscesses do not appear until months after the contraction of the gonorrhœa, there have arisen exciting and contributary causes. Among these may be mentioned exposure to wet and cold during the menstrual period, excessive venery, the introduction into the uterus of that much abused instrument the uterine sound, or of irritant applications or tents, operations on the cervix and as forcible stretching of the cervical canal, and the operation for closure of a lacerated cervix. In the latter operation, independent of sepsis, the too great closure of the canal, and the consequent interference with the proper drainage of the uterus, may constitute the contributary cause of the pyosalpynx. In cases of lingering gonorrhœal salpingitis, it requires but little additional irritation or mechanical disturbance of the uterus or of its appendages to awaken active suppuration within the tube, a leakage of the pus through the fimbriated extremity awakens a local peritonitis; adhesion and deposits of lymphs occur with prevention of further escape of pus, and then, if the uterine extremity becomes occluded by adhesion, an acumulation of pus arises and an intratubal abscess is established. That this form of abscess arises also from extension of septic infection from the uterus, seems generally accepted, but as is well known septic inflammations are not usually plastic in nature, and while septic salpingitis is not rare, yet the conditions are unfavorable for the formation of a tubal abscess, inasmuch as the patulency of the tube is more likely to become increased from relaxation of the tubal and uterine parenchyma than is occlusion of the extremities of the tube from adhesion or exudation. When the septic infection is intense, the patient succumbs in a few days; when it is slight, the patient usually recovers with crippled pelvic viscera, and without the formation of an abscess except in rare instances. After abortion the usual pelvic inflammation is that of septic salpingitis and ovaritis, yet my observations lead me to believe that intratubal abscess, dependent upon an abortion, is of infrequent occurrence. Still it occurs probably with greater frequency after abortion than does areolar abscess. The latter occurs more frequently than the intratubal variety, after labor at or near the full period. The frequent laceration of the cervix and vaginal vault during the latter labors opens the gateway to the infection of the lymphatics leading into the areolar tissue. In abortion the infection begins within the uterine cavity and the tube soon becomes involved.

If the cervix has suffered, as it may in criminal abortion, areolar abscess may arise, or in even non-criminal cases the uterine lymphatics may carry the infection directly into the connective tissue. In early pregnancy, however, the uterine lymphatics are not active, and infection travels then most rapidly among the tubes.

Of course septic salpingitis with possible subsequent abscesses may arise from the introduction of the dangerous uterine sound, or of the very rarely indicated and exceedingly dangerous uterine tent, or from operations on the cervix, vagina or the external genitals when a sepsis has not been preserved. It is to be remembered also that intratubal abscess occasionally develops in connection with tubercular and carcinomatous disease of the uterine appendages.

The successful treatment of pelvic abscess often demands an exercise of the most deliberate judgment and the highest operative skill. It is true that a considerable number of areolar abscesses result in cure by a spontaneous escape of the pus, chiefly into the vagina or into the rectum. But the frequency with which permanent fistulæ follow spontaneous evacuation is sufficiently great to render it unwarrantable to wait for such an event. The undoubted indication is to establish perfect drainage through either the vagina or the abdominal wall as soon as safely practicable. Perfect drainage will alone meet the surgical indication in such an abscess, but is it possible always to determine whether or not the pus is in the areolar tissue? Having the constitutional symptoms of an abscess, the location of the induration or of fluctuation may aid in the diagnosis. That is, the patient having constitutional evidence of suppuration, should fluctuation or induration exist in front of the bladder or in the iliac fossa, and not be present in the locality of the tubes and ovaries, an areolar abscess probably exists.

Again, in some rare instances the direction taken by the accumulating pus may aid in the diagnosis. I have diagnosticated pus in the areolar tissue by finding that the advancing swelling was extending upwards out of the pelvis, in a postero-lateral direction, *i. e.*, toward the kidneys following the abundant layer of connective tissue in that region. When the increase in size of the swelling is rapid, the probabilities are that the inflammatory process is in the areolar tissue. A prominence, or fluctuation to be detected in the vagina, does not throw light on the location of the pus unless it be in front of the bladder. When the origin and the progress of the case justifies the belief that pus has formed in the areolar tissue, an extraperitoneal incision is called for. I do not practice aspiration of a pelvic abscess of any variety as a remedial or curative measure. I dislike very much to resort to it for diagnostic purposes. It often leads to extension and aggravation of the inflammatory action. I would say that aspiration is very rarely justifiable.

In areolar abscess if there is bulging in the vagina, an opening should be made at that point. In opening through the vagina the median line posteriorly must be the elective point as laterally and anteriorly there is danger of wounding either the uterine artery, the urethra or the bladder. It is better to avoid the knife at least after passing through the mucous membrane. Thomas makes an incision through this membrane, then works the index finger through the deeper tissues until the pus cavity is reached. I have repeatedly, after making an incision through the mucous membrane, pushed into the abscess a blunt grooved director and dilated the opening by passing along the groove a strong pair of closed forceps, separating the blades on their withdrawal, after the manner of opening deep seated abscesses recommended by Mr. Hilton.

I have also found the plan practiced by Goodell an excellent one, namely to thrust a closed pair of scissors, not too pointed, and on withdrawing them to separate the blades. If the finger is introduced it will be found that when the pus is in the areolar tissue, there is, after its escape, considerable, if not complete, collapse of the abscess walls, and their inner surfaces are fibrillated, but if an intratubal abscess has been opened the interior will be smooth and there is less tendency for the walls to approach each other, the latter being prevented by reason of the dense peritubal adhesions. If the opening secured is sufficiently large, I syringe out gently the cavity with a solution of corrosive sublimate, one part to three thousand, and introduce a rubber drainage tube.

I have never opened into an abscess through the rectum. While it is true that many cases opening spontaneously *per rectum* recover promptly, yet always there is great danger that gas or fæcal matter will escape into the abscess cavity and establish a permanent fistulous tract. Even if the pus seems quite ready to escape into the rectum, I prefer to open through the vagina.

In many cases the suppuration begins in the areolar tissue so high up in the true or the false pelvis that an opening *per vaginam* is unsafe. Then an incision can be made through the abdominal walls, and usually with the most satisfactory result. The most favorable point in many instances will be above Poupart's ligament, along either its inner or its outer half, not extending the incision so as to endanger the deep epigastric artery, or the iliac vessels. The incision should be made early and carried, it may be, deep into the pelvis, until pus is reached, taking care to keep external to the peritoneum. An early incision can be made at this point and is peculiarly advantageous, for thus can be avoided the establishment of fistulous tracts and the serious crippling of the pelvic organs.

After irrigating the cavity I introduce preferably a large perforated rubber drainage tube. A few instances of perforation of the iliac artery, from ulceration caused by the tube have been reported. Even when the rubber tube is employed, one must remember that the large vessels are imbedded in the areolar tissue and the tube may come in direct contact with them, unless special care is taken to prevent it.

When the abscess is of the intratubal variety drainage is not so safely secured, nor can a cure be expected from it. The early removal of the appendages after a median abdominal section is the only rational and reliable procedure. The most careful toilet of the peritoneum must be effected and in most instances the drainage tube is necessitated. Usually if the case is seen early the diagnosis is easy, yet in some cases the diagnosis is exceedingly difficult and may not be possible until after the abdomen has been opened.

In arriving at a diagnosis one is aided by a history of gonorrhœa in the husband, of dyspareunia on the part of the woman, and of recurring attacks of pelvic inflammation. The uterus is immobile and a mass rarely fluctuating is felt *per vaginam* to the side of or posterior to the uterus. In cases where suppuration has existed for several days or weeks an indurated mass as large as the closed fist, or larger, rises to the brim of the pelvis, or higher. Usually by this time involvement of the opposite side has occurred. The abscess increases in size less rapidly than the areolar variety and the pelvic viscera are immovably matted together. An incision in the linea alba is indicated and the surgical procedure frequently is of the most difficult and delicate character. Mr. Tait has taught the surgical world a most valuable lesson as to the manner of dealing with such abscesses and among us Drs. Joseph Price, W. G. Wylie and others have achieved results in this direction of which modern surgery may well be proud.

I shall not enter into the details of the operation of removal of a pyosalpynx from its abnormal and intricate environment. I have preferred in this paper to consider the principles involved rather than the surgical technique in detail. While removal of the appendages is the only rational surgical proceedure, there are still cases so long neglected and in which the complications are so grave and extensive and the patient is so exhausted that the immediate removal of the appendages would be attended with the greatest danger; and in a number of instances has eventuated fatally. In such neglected cases it may be the part of wisdom first to secure drainage through the vagina or the abdominal wall and to improve the general and local condition of the patient before attempting the radical operation. After drainage has been secured the adhesions and lymph deposits become absorbed to some extent and the patient regains her strength in part. Then the removal of the appendages can be effected with relative safety. Doubtless in some instances drainage alone has effected a cure in intratubal abscess. Prof. Reamy reported such a case at the last meeting of the American Gynecological Society; but such a result cannot be expected and will prove very exceptional.

In the attempt at drainage it must be remembered that intratubal abscesses are usually double —one in each tube—or even in the same tube there may exist two or more abscesses and the drainage may empty but one, Recurrence is the rule when merely drainage of the intratubal abscess has been attempted. Also inasmuch as, owing to adhesions, the walls of an intratubal abscess do not rapidly collapse, atmospheric air is drawn into the cavity during drainage and septic germs are peculiarly liable to enter.

In cases of doubt as to the location of the pus, exploratory laparotomy may be indicated, and if the pus is in the areolar tissue, a second and extraperitoneal incision is much better than to empty the abscess through the peritoneal cavity, and to stitch the abscess wall to the parietal wall as has been practiced by Mr. Tait. In a large number of pelvic abscesses on which I have operated I have seen but one in which such a procedure was the best one, and that single instance was an intratubal abscess of large size.

Even in the latter form of abscess the pus may sometimes be drained off as a palliative measure by an incision made, it may be made after a median section.

With two fingers in the peritoneal cavity, not only can the appendages and the pelvic cavity be explored, but one is greatly aided in locating the pus when it is in the areolar tissue, and in effecting safely an opening at the most favorable point.

The intraperitoneal variety of pelvic abscess is where the pus is within the pelvic peritoneal cavity and is not of frequent occurrence. It is an error in nomenclature to designate an intratubal abscess as an intraperitoneal abscess. An abscess actually within the peritoneal cavity is not of frequent occurrence. Yet we find it a result of inflammation following the leakage of a gonorrhœal tube, or of a septic tube as after delivery, or it may follow some surgical procedure about the genitals. Again it may arise from extension of inflammation along the lymphatics communicating with the peritoneum, or it may be the result of a foreign body such as a ligature left in the pelvic cavity. When the ligature is the cause of the abscess it is either, because it was unclean when introduced or was to much disturbed by the drainage tube, or it was too large, or was in close proximity to the rectum whence septic germs had migrated through the tissues. It is a difficult matter to differentiate this variety of abscess. We must be assisted largely by the history of the case. Laparotomy, evacuation of the pus and removal, if practicable, of the exciting cause are usually the indications, or in case of a ligature it may be fished out through the fistulous tract or it may escape spontaneously. The accumulation of pus within the peritoneum may be very large, the mass reaching as high as the diphragm and displacing the viscera in various directions. In one case I removed through a median incision two gallons of pus, with recovery of the patient.

I cannot close this paper without urging the necessity of operating early in every variety of curable pelvic abscess.

The besetting sin of the family practitioner and of the timid and doubting operator is to wait. In this delay the dangers become cumulative, and the surgeon is asked to operate when the case is hopeless. If the patient dies, the general practitioner often is discouraged and in his next case, he waits still longer under the hope that pus may not form or that it may escape spontaneously. He has seen some instances in which he believed suppuration had occurred and yet resolution took place, and he has seen other instances in which after spontaneous evacuation recovery was rapid. So he justifies his delay and gynecology receives the unmerited obloquy attendant upon fatal results inasmuch as the conditions under which an operation is performed are rarely considered by the public or by the profession.

The formation of permanent fistulæ is usually an evidence of the lack of skill or courage on the part of the physician. The fistulous tracts constitute, it may be, indelible evidences of cowardice and inefficiency on the part of the medical attendant. Early surgical interference with the knife should be the inflexible rule in the treatment of all varieties of pelvic abscess.

MENTHOL IN LARYNGEAL PHTHISIS.

Read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, held at Newport, June, 1889.

BY CHARLES H. KNIGHT, M.D.,
OF NEW YORK CITY.

But few diseases appeal more keenly to our sympathy than laryngeal phthisis. Extreme pain in swallowing, racking cough and stridulous breathing combine with other symptoms so well known to form a most distressing spectacle. A glance at the long list of medicines and measures which have been, at various times, advocated in its treatment proves the earnestness of the search for a remedy. Experiments with new drugs and new methods have been eagerly undertaken and hopelessly abandoned, until at last the majority of practitioners have settled down to the conclusion that palliative agents are the only resource.

Of recent contributions lactic acid and menthol have, perhaps, attracted the most attention, in part because of the extraordinary claims made in their behalf. If the statements of Rosenberg,[1] the most ardent champion of menthol, are to be accepted, we have in that drug almost a specific in laryngeal phthisis. His views have been more or less corroborated by von Brunn, Beehag[2] and others. In nine out of fifty-seven cases treated by Rosenberg laryngeal ulcers healed, infiltration subsided and subjective symptoms disappeared in from one to four months. In all the cases in which the treatment was persevered with, twenty in number, there was marked improvement. His first successes have been confirmed in more recent cases, the total number now reaching nearly one hundred. Compared with lactic acid, the action of menthol is said to be slower but less painful. He claims to have demonstrated diminution, and, in some cases, disappearance of bacilli. He strongly insists upon the analgesic effect, and especially upon the antiparasitic properties of menthol. On the other hand, Fürbringer emphatically denies its germicidal power, at least so far as the bronchi and pulmonary tissues are concerned. Von Brunn[3] finds that menthol gives better results in patients of delicate habit and in those of nervous, irritable temperament; yet, even in the absence of laryngeal stenosis, and in spite of his success with lactic acid and menthol, he favors tracheotomy, with the idea of giving the larynx immunity from irritation and of preventing aspiration into the bronchi and lungs of laryngeal secretions laden with bacilli. In taking this position he might fairly be suspected of lack of confidence in local applications.

Menthol has been employed in the larynx in several ways. An apparatus has been devised by Dr. Howard Smith[4] especially for spraying hot vaseline in conjunction with menthol, iodoform, or oil of eucalyptus. He uses the spray through the nostrils, and lays unnecessary stress upon the importance of having the fluid *hot*. At first I used it dissolved in olive oil, as suggested by Rosenberg. Lately a solution in fluid albolene, in the proportion of a drachm or a drachm and a half to the ounce, has been found more agreeable. Even with the weaker solution a good deal of irritation and cough is sometimes excited, while some cases bear the stronger solution without much complaint. Patients were directed to inhale ten or twelve drops of the solution from the surface of steaming hot water, or a few drops were thrown over the ulcerated surface with a laryngeal spray or syringe, or the application was made directly with a pledget of cotton. The easiest and perhaps the most effective way was found to be by inhalation for a few minutes every half hour from a nebulizer or vaporizer. The medicated vapor no doubt reaches the bronchi as well as the larynx, and is probably deposited on the mucous membrane of the entire air tract, provided the patient is directed to hold the breath for a few moments after taking an inspiration.

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[1] Therap. Monatshefte, H. 7 and 8, 1888; also, Deutsche Med Wochnschr., 1887, p. 338.

[2] Edinb. Med. Journ., Jan., 1888, p. 625.

[3] Deutsche Med. Wochnschr., 1887, p. 404.

[4] Journ. Am. Med. Ass'n, Sept. 22, 1888, p. 410.

In every case of application with the syringe or brush, cocaine in 10 per cent. solution was first sprayed into the larynx. In only a very small proportion of cases was menthol the sole reliance. Cod liver oil, the hypophosphites, arsenic and iron were used according to indications. In several cases of extensive ulceration and of perichondritis cocaine was sprayed into the fauces to facilitate deglutition, and in some cases morphine was resorted to for the relief of cough. I have never used menthol internally. Rosenberg himself admits that no effect upon the bacilli was seen to follow its internal use, although appetite improved and secretion diminished.

My observations, which have been purely clinical, cover a series of twenty cases treated with menthol in the last two years. No note has been made of the presence of the tubercle bacillus. The diagnosis in each case rested solely on the gross appearance of the laryngeal lesion, confirmed by general symptoms and the existence of well-marked pulmonary disease. Five of these cases were watched to a fatal issue and six are still under observation. In four there was at the outset no laryngeal ulceration. Six were females. The ages ranged from 21 to 39 years. In two cases there was a family history of cancer, and in only three was there a distinct history of death in the immediate family from phthisis. Brief notes of the history of a single case may be of interest as illustrating the results with lactic acid and with menthol.

The patient was an elevated railroad conductor, 37 years old, whose mother died at middle life with some chronic pulmonary disease, probably phthisis, and whose younger brother undoubtedly has pulmonary phthisis. He first came to me for treatment in December, 1886, complaining of the usual symptoms of tuberculosis. He had the appearance and gave the history of a tubercular subject. He had a small cavity at his left apex and a patch of consolidation at his right apex. The larynx presented the characteristics of tuberculosis and an ulcer occupied the posterior commissure, whence it invaded to a slight extent the posterior extremity of the left ventricular band. The vocal bands were intact but very hyperæmic and much impeded in their movements. Lactic acid in 50 per cent. solution was applied on a laryngeal probe tipped with absorbent cotton. Six applications were made at intervals of a week and marked improvement in all respects ensued, the patient at the same time taking cod liver oil and the hypophosphites. Five months later two more applications of the pure acid were made. The patient then went to live in the country for the summer. In September, 1887, he came to me, saying that he felt so well that he intended to resume his occupation. The laryngeal ulcer had apparently healed, with some loss of tissue, but the arytenoids were still somewhat swollen and the larynx was highly congested. There had been no marked change in the condition of the lungs, but the general condition was certainly much better. In spite of my warnings he did attempt to work, and I did not see him again until March, 1888, when he presented himself in a most pitiable condition. All his subjective symptoms were much aggravated. The pulmonary lesion had considerably extended, there had been great loss of flesh, he was hardly able to walk, and could not speak above a whisper. On looking at the larynx it seemed as though no part of its posterior wall were free from ulceration. The arytenoids were enormously swollen and œdematous, and the vocal bands, which were exposed by deep ulceration of the ventricular bands, were thickened, eroded and almost immovable. Under the circumstances it did not seem justifiable to resort to lactic acid, and he was therefore put upon menthol inhalations combined with general tonic and stimulating treatment. His recuperative power was surprising, and for several weeks he seemed to make headway. The laryngeal ulcer became cleaner, the secretion was less abundant and more easily expelled, his appetite improved, although swallowing had to be made easy by the habitual use of cocaine, and signs of better nutrition were evident. Toward the end of summer, however, he again began to fail, although his larynx remained about the same. He began to have extreme odynphagia, which neither morphine nor cocaine would relieve. The prone position in taking fluids, as suggested by Wolfenden, was tried without success. The pain in swallowing finally became so great that he could not eat, and death occurred in November, 1888. This case seems to be especially instructive. In the beginning of treatment the lung affection was so limited and the general condition was so good that spontaneous healing of the laryngeal ulceration might have taken place under tonics and good hygiene. Probably the lactic acid applications hastened the reparative process. When the use of menthol was instituted all the conditions were extremely unfavorable; yet the laryngeal lesion, for a time, assumed a healthier aspect, and there was temporary amelioration of all the subjective symptoms.

There is no question whatever that tubercular ulcers of the larynx may cicatrize[5] under proper treatment and conditions; but it cannot be maintained that tuberculosis is thus cured. We may admit that tuberculosis begins as a local disease, and that primary laryngeal tuberculosis is possible.[6] In such case healing of the laryngeal lesion means prevention of general tuberculosis. When infection of the system has already taken place the cure of an ulcer of the larynx merely relieves an harassing symptom, and that, unfortunately, only for a time, since it is a clinical fact that the cicatrices of laryngeal ulcers in tubercular subjects are prone to break down and the ulcerative process again becomes active. In menthol we seem to have a drug which has a peculiar sedative effect in tubercular laryngitis. To most patients it is soothing and grateful. Under its influence hyperæmia is diminished and secretion is lessened. In some cases cough and dysphagia are relieved. It may encourage a tendency to cicatrization, which is now and then witnessed in tubercular ulcers of the larynx even without special treatment. It is not unusual to observe displacement of a sloughy surface by apparently healthy granulations, and an attempt at repair begins. I have not seen a well defined tubercular ulcer of the larynx completely heal under its use, although, in many instances, superficial erosions, "catarrhal ulcers,"[7] perhaps due to irritation from cough and perverted secretion, have disappeared.

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[5] See article by Sokolowski, of Warsaw, in Wiener Klin.Wochnschr., Jan. 24, 1889, p. 66.

[6] See paper by Dr. John Sezdiak in the Journal of Laryngology and Rhinology, June, 1889.

In conclusion, it would seem that we are not yet forced to adopt the discouraging opinion held by Massei[8], of Naples, that "we are still in want of some remedy or remedies to effect the cure of laryngeal phthisis." The beneficial effects of menthol are obvious, and in propitious cases a cure is feasible; yet the extreme claims of its warmest defenders should be accepted with some reservation. Three points suggest themselves for our consideration:

1. Spontaneous cure of a tubercular ulcer of the larynx may occur.
2. A simple erosion or ulceration may be mistaken for a tubercular ulcer.
3. The best results from local treatment of the larynx may be expected in cases of incipient or limited pulmonary disease, and in primary laryngeal tuberculosis.

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THE CLINIC.

SURGICAL CLINIC AT THE HARLEM HOSPITAL, NEW YORK, DECEMBER 13, 1889.

BY THOMAS H. MANLEY, A.M., M.D.,
OF NEW YORK.

[Reported for THE JOURNAL.]

Gentlemen:—The first case presented for operation is one of strangulated inguinal hernia. The patient, a young man of 24 years, gives a history of having first noticed a swelling on the left side when he was 6 or 7 years old. He wore a truss thereafter almost continuously, until two years ago, when he found that, after leaving it aside, the hernia did not reappear.

The features in the clinical history to which we wish to particularly direct attention are, first, the origin of the trouble. The patient was only cognizant of the existence of the hernia when he was 7 years old. The protrusion may not, indeed, have attained sufficient volume to attract notice till this age, but it is pretty certain that the lesion was of congenital origin, as are the vast majority of all herniæ.

Next, the patient, supposing himself cured, discarded the truss for two years, and it was only when he made a severe strain, that he found his rupture returning. Now for the first time we find that, after many patient and persevering efforts, the patient cannot return the hernia.

It came down at about 3 in the afternoon. At 5 P.M. a local practitioner was called, who also failed to reduce it. Constitutional symptoms having developed, the patient was advised to seek admission to hospital. The great pain at the seat of the protrusion, which is very large, with the constant vomiting, and great exhaustion, all point to strangulation. In the treatment of this case we have two objects in view. The first and most important one is to release the obstruction, cut down and divide the constricting band, wherever it may be located; and then go on, and complete an operation which has for its object the radical cure of the hernia.

And here, we must notice the defective structural development, the deranged and confused anatomical position of the parts, before we can decide on the precise surgical measures which may prove most efficient in securing a cure.

Does the fœtal type still persist?

Is there an undescended testis, or one lying somewhere along the inguinal canal; or, if it has descended from this position, has it contracted adhesions with the floating viscera of the abdomen, and carried a portion of them to the base of the scrotum?

Is the fault due to a lavish, a morbid supply of omentum, or an abnormally long mesenteric ligament?

The operation is begun by the long, free incision. In going down deeply, it is at once manifest that it is a case of the congenital variety. We find no true sac; the immense mass of extruded omentum lies in snug apposition with the tunica albuginea, of the testis, but not adherent to it.

Finding the condition of things unfavorable, we shall not be able to do the classic operation of McBurney, which we have hitherto performed with most gratifying results in strangulated hernia.

We shall make a sort of modified McEwen operation, what might be designated perhaps as a "McBurney-McEwen operation;" *i. e.*, having no sac to ligate, without sacrificing the testes, we shall be obliged to protect the one remaining—really the sheath of the spermatic cord—and at the same time fill in, and obliterate, the greatly enlarged space between the pillars of the ring. In order to do this, after ligating and cutting away the superfluous omentum, we fix the remaining stalk in the canal with the quilled suture, after the plan of McEwen, while the remainder of the operation is completed after the plan of McBurney. The cutaneous surfaces of the wound are sewed down to the peritoneum, and the whole treated by the open method.

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[7] See Gouguenheim and Tissier, "Phthisie Laryngée," Paris, 1889.

[8] The Journal of Laryngology and Rhinology, vol. i, 1887, p. 164.

The second case for operation is another hernia. The patient, a boy of 7, has had this hernia (left) since birth. His father had him carried to divers traveling charlatans during the first few years of his life, but latterly has consulted with several well known surgeons regarding him. There has been a great difference of opinion as to what the swelling really was, and the plan of treatment; some maintaining that it was a hydrocele, or an encysted spermatocele, etc.; some recommended operation, and others frowned at the very idea of it.

There are a few points unmistakably clear, in connection with this case.

The first; that there was a protrusion, that went on increasing with the boy's growth, and that it could not be reduced. Further, it is growing so rapidly and becoming so prominent under the trousers, as to attract notice, and hence is bringing down on the lad the jeers and banter of other boys, so that the little fellow, himself, is anxious to get rid of it.

Thorough antisepsis being maintained, the operation is commenced by making the usual long, free incision over the line of the spermatic cord, from the internal ring downwards. Here, as in the preceding case, there is no sac; and we proceed to freely lay open the tunica vaginalis which invests the protruded mass, and cannot be sent back to the abdomen by ordinary taxis. The enlargement consisted of nearly 12 inches of intestine. We find on careful examination, that the reason the gut failed to return was not resistance from above, but because, on its mesenteric border, the vas deferens, the epididymis and testis are in one confused mass, all bound rigidly to the intestine by well organized fibrous tissue, which must be divided with the scissors.

After thoroughly freeing the bowel, the atrophied testis is removed, high up, the gut itself returned, and the peritoneal cavity closed by ligating the fascia propria, on a level with the internal ring. The wound is to be treated by the open plan.

We next exhibit a man of 73 years, on whom we operated successfully two months ago. The man had a large incarcerated hernia on each side, which he said had annoyed him for more than forty years. At first they were readily reducible, but owing to badly fitting trusses, a localized peritonitis developed, which ended in the firm adhesion of the sac with its contents, and the production of the condition which is usually observed after a sufficient lapse of time, *i. e.*, an incarcerated hernia.

The great difference in age should be noted in these two cases; but neither extreme constitutes an obstacle to operative measures, when the patient is in sound health; indeed, in congenital hernia we would advise the operation at the earliest possible date, preferably before the infant is a month old.

P. S. Both cases made excellent recoveries, and were dismissed from the hospital, cured, six weeks later.

MEDICAL PROGRESS.

PATHOGENIC PROPERTIES OF MICROBES IN THE INTERIOR OF MALIGNANT TUMORS.—PROF. A. VERNEUIL (*Rev. de Chir.*), after a long and careful study of the pathogenic properties of microbes found within malignant tumors, concludes that they modify the nutrition of neoplasms, accelerate their growth, render cell proliferation more active, and are notably the chief agents of ulceration and softening, the exact causes of which still remain obscure; that they possess special pathogenic properties, by virtue of which they affect the ecomomy in some cases like septic poisons. Prof. Verneuil summarizes his further observations as follows:

1. The tissue of malignant neoplasm (cancers sarcomata epitheliomata, etc.) may be invaded at a given time by various microbes whose origin, character and numbers cannot be definitely ascertained.

2. This invasion, the causes and mechanism of which are equally unknown, may remain latent for a longer or shorter time; but in some cases it may also lead to various modifications in the evolution and nutrition of tumors, among others to rapid growth, softening and ulceration.

3. Microbes are not found in all kinds of neoplasms, nor in all neoplasms of the same kind, nor even in all parts of a single neoplasm that has been invaded. They are not found, for example, in lipomata, pure fibromata, sarcomata, or commencing cancers of slow growth, in an unformed condition and covered by healthy skin; on the contrary, they are found almost constantly in softened and ulcerated neoplasms.

4. These microbes, besides the irritating and inflammatory action which they exercise locally upon the tissue of the tumor invaded, possess other pathogenic properties of importance to the entire ecomomy. Furthermore, in all probability

they are capable of lighting up a more or less intense and irregular fever while they are still enclosed in a tumor which is in the process of rapid growth or softening. Again, during the removal of a tumor containing them they may be mixed with the fluids of the softened parts of the tumor, and thus, spreading upon the field of operation, they may contaminate it, infect it, and inoculate it in such manner as to provoke the development of a dangerous septic fever.

5. Recognition of this last fact argues in favor of the early removal of malignant neoplasms, so desirable from every point of view, and points out to surgeons certain preventive measures to be observed during and after the extirpation of tumors infected by microbes.

TREATMENT OF DIPHTHERIA.—DR. A. TURILAZZI (reported in *Wiener Med. Woch.*) employs a sublimate solution, for local application in diphtheria, of the following strength:

R Sublimate . . . . 0.30 grm.
Alcoholis conc. . . . . . e. s. ad solut. exact.
Adde glycerinæ . . . . 15.0 ccm.
Filtra per cartam.
S. To be applied with a pencil.

The reporter has never observed the slightest symptom of intolerance of this solution. It is thoroughly applied to all parts covered by the membranes from seven to ten times in succession, the pencil being cleansed each time. The applications are made twice a day in light cases, and from three to four times a day in the severe ones. In this manner the reporter has treated 182 cases of diphtheria, with only nine deaths, while a colleague, at his recommendation, has treated 87 cases, with three deaths. This gives a total mortality of the cases thus treated amounting to only 4.09 per cent. Especially notable in this treatment is the diminution in the duration of the disease, which seldom exceeded eight days, and never fifteen.

THE PREVENTION OF TUBERCULOSIS.—In discussing, at the French Academy of Medicine, the instructions relating to the prevention of tuberculosis which emanated from the Congress of Tuberculosis, M. LEROY DE MÉRICOURT said he feared that the divulgence of the dangers of contagion would terrify the public, and that the unfortunate victims of the disease might therefore be abandoned like lepers; he felt the more alarmed because he was not thoroughly convinced of the dangers of contagion; he was not acquainted with a single clinical case where phthisis had been communicated by contagion; he was unaware of a single case of contamination from meat; he believed that the specific bacilli had not been found in milk, and therefore it was unnecessary that warm milk should be abandoned for the less agreeable and less digestible boiled article, and that rare beefsteak should give way to meats impaired by too prolonged cooking. He believed that it would be impossible to carry out the practical execution of the recommendations contained in the instructions.

M. TRASBOT, like the previous speaker, had never observed the transmission of tuberculosis from animals to man. Tuberculosis, he said, is becoming less and less frequent among cattle, and the cows of the Paris dairies are in excellent condition.

M. NOCARD called the attention of the other speakers to facts proving the contagious character of tuberculosis. But it remained for M. CORNIL to properly dispose of the question. He cited clinical facts demonstrating contagion from man to man; he also reported the importation of the disease from phthisical subjects in countries where it had hitherto been unknown. It was thus that the Fuegans first became affected with tuberculosis, which was brought to Terra del Fuego by a clergyman's family. The wife of the clergyman was a consumptive; she founded a school, and after a time the young Fuegans, her pupils, were decimated by acute phthisis, ; thus their teacher brought them at once the Word of God and the bacillus of Koch. M. Cornil has frequently found the bacillus in milk.

All these facts authorize the declarations contained in the instructions. As for the fear of injuring the sick by revealing the dangers of contact with them, it is entirely illusory. Numerous other diseases are regarded as contagious, but their victims are not left without resource on that account.

As for the rest, the Academy may authorize the publication of the instructions or not, the moral effect will be neither increased nor diminished, the entire press having already made every variety of comment regarding the instructions of the Congress of Tuberculosis.—*La Prov. Méd.*

FIFTY CASES OF CARCINOMA MAMMÆ.—DR. E. BRIAN reports fifty cases of carcinoma mammæ operated on by Prof. Courvoisier. The writer directs attention to the fact that whereas in 1869 Busch was acquainted with only a single case in which there was no return of the disease eight years after the operation, the statistics of recent times show from 4.7 per cent. to 30 per cent. of definite cures. Of Courvoisier's fifty cases all but one occurred in women; if we subtract from these six inoperable cases, three cases in which there was freedom from a return of the disease but death from other causes, three cases in which there was immediate death from the operation, etc., there will remain thirty-five cases of operation with eleven definitive recoveries, in so far as this term may be applied to observations extending over a period of from three and one-half to nine and one-half years. This gives a percentage of recovery amounting to 31.42, or, taking the fifteen other cases into consideration, 23.9. Such figures forbid the expectant treatment of mammary carcinoma. One case is particularly noteworthy in which, upon the second return of the disease in the axillary glands, the patient was operated upon and has remained healthy for nine years.

The reporter gives the following among the predisposing causes of the disease: Sex; age, the highest percentage being reached at the maturity of womanhood with a maximum at the climacteric; frequent childbearing, lactation, mastitis, local irritation, trauma; hereditary influences (recognized in one-eighth of Courvoisier's cases).

In this series of cases it was observed that mammary cancers in general tend to extend outward toward the surface with ulceration or fixation of the skin before they extend to the subjacent tissues; when they extend in the latter direction immobility of the breast becomes a prominent symptom.

The principles according to which Courvoisier proceeds are as follows:

1. The entire mammary gland must be removed together with a liberal amount of integument.
2. At the slightest suspicion the axilla must be cleared out.
3. When it is necessary to clear out the axilla the operation must be begun in this locality and completed by subsequent removal of the breast. In this wise the severest portion of the operation is first completed and one avoids the danger of double hæmorrhage from the axillary vessels, and at the same time lessens the danger of infection through the lymph channels.

The operator calls attention to the malignancy of carcinoma of the breast in men, and to the loss of two of his patients from septic processes which he attributed to the use of juniper catgut. —*Corres.-Bl. für Sch. Aerzte.*

EXPERIMENTAL INOCULATION OF CANCER IN RATS.—HANAÜ, of Zurich, reports experiments in the inoculation of rats from a cutaneous cancer obtained from a rat. He transplanted small pieces of a vulvar cancer with ganglionic metastasis in the scrotum of old rats. One of these died in seven weeks from a diffused peritoneal cancer; the other was killed at the end of eight weeks and exhibited two cancerous nodules situated in the tail of the epididymus. A small fragment of this was inoculated in a third rat and an autopsy made three months later showed a diffuse cancer of the scrotum, with involvement of the peritoneum. In all these cases the diagnosis of carcinoma was established by careful histological examination, which also demonstrated the corneous character of the cancer.

The reporter ignores the failure of inoculation under the following conditions: Subcutaneous implantation in the place of transplantation upon serous surfaces, traumatic suppuration, and finally the employment of fragments taken from the human subject, or inoculation of animals of different species and very young animals.—*Rev. de Chir.*

TREATMENT OF ŒSOPHAGEAL STRICTURE.—What is the best method of treating stricture of the œsophagus? M. Nicaise advises early gastrostomy for cancerous strictures; M. Kirmisson, the prolonged use of the rubber sound; M. Le Dentu, for cicatricial strictures, internal œsophagotomy with an apparatus with blades of increasing size, analogous to the maisonneure urethrotome. Prof. Le Fort, in his report to the Academy upon these three methods, expresses his preference for progressive dilatation in cicatricial strictures, and the prolonged use of the sound, to gastrostomy, which, according to the statistics of Zesas, has given 111 deaths in 129 cases of cancer.

QUININE AND SULPHUR IN DIPHTHERIA.—DR. JOSEPH BURGHARDT (*Wiener Med. Woch.*) recommends the use of quinine and sulphur by insufflation in the treatment of diphtheria. He uses the sulphur lotum and sulphate of quinia in equal parts. Since using this combination he has treated thirty-three cases of diphtheria occurring in patients of all ages, and the results have left nothing to be desired; whereas, before adopting his present method of treatment, he lost one case in every three or four.

A CURE PRODUCED BY ARSENICAL POISONING.—CARL STADLER reports the case of a child 2½ years old that was severely poisoned by swallowing a rat powder containing arsenic. The child was saved by energetic treatment and in eight days was well again. The remarkable part of the case was that the child, which had been backward in its mental development and at 2 years of age could pronounce only a single word, all at once exhibited marked intellectual improvement, making rapid progress from day to day; furthermore, incontinence of the bladder and bowels which had so far resisted all attempts at a cure suddenly disappeared. Stadler is convinced that the sudden mental improvement is entirely attributable to the beneficent action of the arsenic, and he therefore advises the employment of this remedy in moderate doses in cases where anomalies of brain and nerve function are exhibited and where a nervine is indicated to increase the energy of innervation.—*Wiener Med. Woch.*

THE CHRIST HOSPITAL OF JERSEY CITY.—A new hospital at Jersey City has been dedicated, under the auspices of the Episcopal Church, and will be known as the Christ Hospital of that city.

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ALBUMEN, ITS DECOMPOSITION PRODUCTS, AND THEIR RELATION TO HEALTH AND DISEASE.

In the mineral world, certain fixed and definite laws have been determined governing the splitting up of complex chemical molecules into simpler ones. Similarity of ultimate composition, for example, determining the lines of cleavage in certain crystalline groups; or the simpler molecules resulting from the application of such decomposing influences as heat, pressure, light, or electricity to more complex ones. Again, similarity of chemical constitution determines the physiological action.

So too, in the organic chemical world, we begin to perceive that the same or similar laws govern the changes taking place in the far more complex molecules here met with. True, we are simply on the threshold of a correct knowledge of these far more difficult questions; yet such are the advances already made we may, with the aid of *a priori* reasoning, throw much light on one of the darkest and most difficult questions of physiological and pathological medicine. Which question once answered, will mark an advance, excelling in grandeur (though dependent in part upon it) that which marks the era of exact science of bacteriology. Dependent upon it—because without the stimulus which this induced to explain the action of pathogenic bacteria on the human organism—many of the decomposition products now familiar to us, would have remained hidden in the chemical lumber-room; and the influence of those known long before they were suspected of being of bacterial origin, would have never been studied.

Albumen, usually looked upon as a single complex molecule, is worthy the utmost interest as regards its decomposition products; since it is not simply as albumen *per se*, it is useful to the organism, but as a source of numerous decomposition products of the greatest importance to understand.

In beginning we stated that chemical molecules undergo certain definite decompositions in accord with the influences to which they are subjected: *i. e.*, they possess lines along which decompositions easiest occur; while the very act of splitting, without further chemical change, liberates in some such form as *heat* or *motion* that latent energy which held the molecule intact.

The molecule under consideration, from whatever source it may be derived, fish, flesh, or fowl, gives certain characteristics to its decomposition products, to this extent, that the lines of decomposition are such that at least three distinct series of chemical bodies are formed which have at their respective heads for their simplest homologues:

1. An acid—(HCN) prussic acid.
2. An intermediated aromatic body like (C_6H_5(OH)) phenol, indol, skatol, and finally,
3. An alkaline or basic body constituted like (NH_3) ammonia.

In brief, an acid series; an alkaline or basic series; and a neutral aromatic series. *Possibly* derived from some of the vegetal albumenoids, we have an example which seems to illustrate to some extent these series in the decomposition of the only well-known *nitrogen-containing* glucoside, amygdalin, thus: (Amygdalin) plus (water) equals (prussic ac.) (oil almonds, am.) (glucose) $C_{20}H_{27}NO_{11}+H_2O=(HCN)+C_7H_5,OH+C_6H_{12}O_6$. SEEGEN has shown that glucose may be derived from albumenoids.

So in the few decomposition products of albumen that have already been studied we find the various series appropriately illustrated thus:

Acid Series.—$C_5H_5N_5$ = adenin; $C_5H_5N_5O$ = guanine; $C_5H_4N_4O$ = xanthin $C_5H_4N_4O_2$ = hypoxanthin; $C_5H_4N_4O_3$ = uric acid; and many others illustrating continuous oxidation.

Aromatic Series.—C_6H_5OH = phenol; (1) C_8H_7N = indol; (2) C_8H_7NO = oxindol; C_9H_9N = skatol; (3) $C_8H_7NO_2$ = dioxindol; (4) $C_8H_5NO_2$ = isatin; $C_{26}H_{43}OH$ = cholesterin; (5) $C_{16}H_{10}N_2O$ = indigo; and many more. Significant too, that many of these are to be found in the vegetable world, probably as leucomaines.

Basic Series.—$C_4H_9N_3O_2$ = creatin; $C_4H_7N_8O$ = creatinin; $C_9H_{19}N_7O_4$=amphicreatin; also CH_5N = methylamin; C_2H_7N=dimethylamine; C_3H_9N =trimethylamine; $C_5H_{11}N$=tetanotoxin; $C_5H_{14}N$ = cadaverin; $C_5H_{15}NO_2$ = choline; $C_7H_{17}NO_2$ = typhotoxin.

In order to give a clearer comprehension, definition of certain terms now met with in articles on this subject seems here appropriate.

Alkaloids, whether of animal, vegetable or putrefactive origin, consist of single or compound molecules of *ammonia* NH_3; $N\left\}\begin{matrix}H\\H\\H\end{matrix}\right.$ in which some of the "H" atoms have been replaced by one or more organic molecules thus:

$$N\left\{\begin{matrix}CH\\H\\H\end{matrix}\right. \text{ and } N\left\{\begin{matrix}CH_3\\CH_3\\CH_3\end{matrix}\right.$$

methylamine and trimethylamine, and having been derived from the volatile alkali "ammonia" they still possess the chemical properties which characterized the parent nucleus, hence are basic, turn litmus blue, and are capable of forming salts with acids, and are volatile. When it happens that there is a molecule of "O" in the radical which replaces the "H" of the ammonia nucleus the resulting alkaloid is *non-volatile*.

When **GAUTIER** began to investigate the decomposition products of albumenoids in the human economy he found certain alkaloidal bodies always present, and as their source was in albumen, he proposed the term leucomaines, from the Greek root which signifies white of egg. As he began to find that they were not simply confined to the animal economy, but were to be found in the vegetable world also, it became necessary to differentiate and limit the term; so that at present it is used to classify those alkaloids which are found in healthy tissues, and are thought to be formed from the indirect (peptic or pancreatic) or direct action of the differing cellular elements constituting the human organism, while the term "ptomaines" is applied to those resulting from the vital processes of microörganisms and their digestive ferments, it is as easily conceivable that they must secrete such, since their stomach or medium of absorption and digestion is on their exterior, as it is to understand the exudate of pepsin and pancreatin from somewhat larger cellular elements of the stomach or pancreas.

As attention was first called to them by Selmi (recently deceased), who found them complicating his toxicological analyses, Brieger urges that the term be retained to denote those cadaveric alkaloids which are only slightly or non-toxic, while the term "toxines" be applied to those found to be decidedly toxic.

BRIEGER says: "According to the standpoint of the practical physician, based on the broad foundations of a definite physiology, all known diseases are divided into, 1, those of a traumatic origin; 2, infectious; 3, metabolic diseases; and 4, neuroses—the last two of which are experiencing an ever narrowing boundary in favor of the infectious group.

"Bacterial chemistry must take a place in the foreground in the clinical understanding of infectious diseases, since the mechanical spreading, as well as deoxidizing and albumen robbing power of the bacteria is not sufficient explanation of the disease symptoms. As living organisms, the bacteria must seize from their surroundings for the construction of their bodies, then throwing off the utilized material, as effete matter, it remains in their immediate neighborhood or enters the general circulation. These can only rivet the attention through the assistance of exact chemistry."

Out of the chaos of waste products there have been extracted and studied a long list of bodies, phenol, indol, cresol and skatol in the aromatic series, creatin in the basic and uric acid in the acid series serving as mere examples.

Even in the very first change from albumens to peptones we experience an alteration from innocent to toxic bodies, as has been demonstrated by the hypodermic injection of the digestion leucomaine of fibrine by pepsin. This is practically demonstrated too frequently, after the too hearty meal, when it happens that the normal capacity of the liver to store them is exceeded, and they escape into the general circulation, producing their characteristic symptoms of somnolence, lassitude and even stupor. We say escape the liver, for a fortunate provision of nature is that which prevents the too rapid entrance into the blood of ptomaines, toxine and leucomaines by colligating them with the sulphuric radical as Baumann has shown, and when this is exhausted then with glycosuric acid, as Schmiedeberg has demonstrated. *Both being* functions of the liver, and in both cases they are converted into non-toxic or insoluble bodies, and therefore innocent. Nor is this only true of the toxines, but similarly true of the medicinal alkaloids like morphia, etc., and explains the cumulative effect in that organ and induces the toxicologist to search there primarily for his poisons.

Certain poisons escape that organ which do not belong to this class (*e. g.* digitalin), and float along to be taken care of by the pancreas, which has been demonstrated to be the organ which takes care of the excess of glucoses with its congeners, while disorders of which organ explains the eccentric form of diabetes. Light here again is thrown on the disposition of the aromatic poisons, which, like phenol, when conjugated with the sulphuric radical, are rendered harmless while still antiseptic, and are excreted through the kidneys in that combination, thus medicating the urine. In like manner other members of that group, indol and skatol, which are always to be found in the waste products of the microörganisms continually present in the intestinal tract, and, as such, are similarly disposed of. Hence, when these fermentations go on to an excessive extent, as in intestinal obstruction, or where the powers of life become impaired, as in diphtheria, scarlet fever or pyæmia, the safeguards, sulphuric and glycosuric acids, are exhausted, and in the urine large amounts of the aromatics appear and form the basis for Rosenbach's test for the benzol derivatives.

Brieger, who deserves the greatest praise for the enormous work he has done in determining the ultimate composition and toxic action of the large majority of all the known toxines and ptomaines, has shown that much of the detrimental action of bacteria is due either to their powers of oxidation or reduction, so that by this means perfectly harmless constituents of the tissues may be converted into deadly toxines, new chemical individualities. In this manner he has extracted from putrefied human, horse or beef tissues, neuridin, cadaverin and putrescin, among the *ptomaines*, and mydato-toxin (an isomer of typhotoxin), also neurin and methylguanidin, among the *toxines*. The last two he has shown to have decidedly toxic action, while nicely illustrating the power of bacteria to convert innocent into dangerous molecules. Neurin can be produced from the common cholin of the body by the abstraction of a molecule of H_2O, and thus a *leucomaine*, poisonous only in immense doses, is by the bacteria changed into the *toxin* that induces death through its paralyzing the posterior extremities, stopping the heart in diastole, as well as developing the other symptoms of the muscarin group, salivation, weeping, pupillary contraction and profuse diarrhœas !

Methylguanidin, on the other hand, demonstrates the oxidation powers of the bacteria, for as source of the intensely toxic convulsive poison we have the comparatively innocent constituent of all animal tissues, *creatin* (Brieger). Simple action of kalium permanganate will convert creatin into methylguanidin in like manner.

Not alone from all this are we to regard as simple foundation stones in the future of medical science, but already very important deductions have been made and utilized. A *fact* (that can be set down as almost an axiom) is that the waste products of microörganisms, as is the case among the macroörganisms, are fatal in the one case as in the other. Further, the excreta of one are also fatal to many other bacteria, the fatality being proportional to the similarity of biological plane. Long before we knew them to be waste products of organisms we utilized our common antiseptics to destroy other or the same organism which had prepared it for us. How instructive is it, then, that phenol, our common microbicide, is the waste product of the bacterium commune coli, as likewise its congeners, indol and scatol, all antiseptics and all derived from albuminoids by the action of germs !

Indigo, belonging to the same group and an antiseptic, is a commercial product of a special ferment and has its admirers in the medical world. Lactic acid (the waste leucomaine of muscle cells), with which we have so far familiarized ourselves that we forget its cellular origin in our utilization of it to destroy the bacillus of green diarrhœa of infants, or add it to our prescription when correcting a fermentative dyspepsia so frequently due to foreign ferments. Nature's safeguard against infection through the alimentary tract we utilize to destroy the dread *B. tuberculosis* in its laryngeal manifestations. Recalling the facts that whenever toxic substances are introduced into the alimentary tract, they are taken care of in one of the following ways :

1. If alkaloids, by conjugation with the "S" biliary acids.

2. If carbohydrates, they escape the liver and are taken care of by the blood and pancreas.

3. If belonging to the class of phenols, they are combined with a sulphuric radical, and when that gives out, are then combined with glycosuric acid and thus rendered innocuous.

We close with the conclusions that:

1. A thorough knowledge of the waste products, or microörganisms, is essential to the clear perception of an infectious disease.

2. That greater utilization should be made of the knowledge that waste products of bacteria are toxic or inhibitive to other than themselves.

3. That normal foods often become toxic through the action of organized ferments.

4. That normal digestion is a continual tidal process of fermentation.

5. That increase of the sulphates is indicated in toxæmia due to excessive fermentation or retention.

6. That to certain toxines the system may become habituated, when a protection is afforded and a rational explanation is offered to protective inoculations, however carried out.

THE PUBLICATION OF PAPERS.

It seems desirable that gentlemen who presented papers at the last annual meeting of the Association should be advised as to the order in which they have been arranged for publication. At the earliest date possible after the meeting the papers from each of the several Sections were numbered and *filed* in the order in which they were there presented.

In making selections for publication it seems a matter of justice that each Section should be represented in frequency according to its number of papers. Thus, if in one Section thirty articles were presented, and in another only ten, three from the first should be published and one from the latter, and that thus no preference would be accorded to any individual Section.

The aim has been to present from three to four articles in each issue of THE JOURNAL, and the only departures from the order indicated have been when in connection with the publication of one very long paper two or three short articles were needed to secure that end. In that manner we are steadily moving on in the presentation of papers, and if those members whose articles have not yet appeared will consult their Section programmes, they will find that the reason lies in the fact that they were late in the presentation of the same in their several Sections.

This much is due to those who so kindly favored the Associations with their communications, and it is also due to the Management which is seeking to act in this matter with utmost impartiality.

PRELIMINARY ARRANGEMENTS.

We are glad to announce that Dr. William B. Atkinson, 1400 Pine St., Philadelphia, as General Secretary of the American Medical Association, is already perfecting arrangements with the principal railroads in the country, whereby special rates of transportation may be secured for members of the Association and such members of their families as may desire to attend the next annual meeting at Nashville.

The Secretary desires, as far as he may, to learn at an early date how many individuals may probably desire to avail themselves of such special rates, and their localities. He therefore invites individual correspondence and will avail himself of the information thus obtained in securing the desired concessions.

Until the last year, the railroads have pursued a liberal policy in this matter, and a generous patronage has well repaid them. Happily, this year the meeting is so located that no single road can bar them from a like liberal policy. We anticipate that such arrangements will be made that the profession will appreciate the inducements offered, and that there will be a very large representation at the annual meeting. Let every member of the Association who designs to attend, at an early date indicate to Secretary Atkinson the number of tickets he may wish to secure and his lines of travel.

It may seem to individual members a little matter, but the aggregate will be very helpful in securing final results.

DR. HOLMES has recently been moralizing over length of days as the reward of correct living. He is reported to have said that "Death to the aged man wears as pleasing a face as sleep does to one who is tired."

EDITORIAL NOTES.

HOME.

A NATURAL TURKISH BATH has been discovered near Salida, Col. In digging a well not far from the Wellsville Hot Springs a cave was struck with apartments similar to the rooms of a house, the heat being so intense as to cause a veritable sweat-bath. The largest room was 20 feet long, 10 feet wide and 10 feet high, and the walls and ceiling perfectly smooth.

MEDICAL ASSOCIATION OF LIFE INSURANCE DIRECTORS.—An organization has been formed among the medical directors of life insurance companies. Twenty companies were represented at the first meeting, which was held in New York City in December. The Association has for its object the promotion of medical science as applied to life insurance. Dr. J. M. Keating, of Philadelphia, is President and Dr. J. Frank Wells, of Boston, Secretary.

DR. T. J. W. BURGESS has been appointed Medical Superintendent of the new Protestant Insane Asylum of Montreal.

BALEFUL EFFECT OF IDLENESS UPON PRISONERS.—The annual report of Prison Superintentent Lathrop, of New York State, presents an official statement of the deplorable results of enforced idleness upon convicts, "in an unprecedented death-rate and an unequalled numerical lapse into insanity." A year's experiment with a law passed in 1888 to meet the clamors of the "friends of labor" has demonstrated that it is the height of cruelty to the prisoners to suspend the usual industrial operations in the State prisons. The prisoners have appreciated this result long before the law-makers and our citizens generally; and when at Sing Sing prison it became known to the former that an authority had been procured for the modified reintroduction of employment, a shout of joy went up from the convicts, and they began to importune their keepers to antedate or anticipate the day of their farewell to idleness. The four chief consequents of the prison labor law of 1888 were an increase of insanity, a higher death-rate, a shattered *morale* and an unprecedented deficit in earnings as compared with expenditures. At the close of the prison year, September 30, the total number of inmates in the three prisons was 3,480, of which 219 were classed as insane criminals, or about one in 15. The present Legislature will be called upon to provide for the reorganization of the labor law for convicts, and wipe out the baneful experiment of 1888.

THE MEDICAL MIRROR.—The initial number of this new magazine is at hand. It is replete with original articles, each possessed of special value, and together representing some of our foremost medical writers. We anticipate that the purposes set forth in its prospectus and in the present number will be more than realized. Under the editorial control of Dr. I. N. Love, we are sure that it will quickly command an extended circulation and a liberal patronage, and that it will prove in every way helpful in the growing field of American medical journalism. We welcome it as an exchange and wish for it abundant success.

FOREIGN.

LA GRIPPE.—The epidemic of influenza, or la grippe, which has been raging in Paris, is on the decline.

QUININE AND ANTIPYRIN FOR THE CURE OF INFLUENZA.—A cablegram has appeared in the daily papers to the effect that the eminent physician of London, Sir Oscar Jennings, relies wholly upon quinine and antipyrin for the cure of influenza; the former drug to kill the microbe, the latter one to quell the pain. Also that Dr. Jennings denominates la grippe as "a bastard pulmonary rheumatism." The advocacy of antipyrin in the papers, and in other ways, has practically resulted in the absorption of the supplies of that drug held by the wholesale druggists of the country. The price has advanced over 100 per cent. in sixty days.

A NEW PROFESSOR OF ANATOMY AT ABERDEEN.—Dr. Robert W. Reid has been made Professor of Anatomy at the University of Aberdeen. He is an alumnus of that institution and formerly a demonstrator of that branch, prior to his becoming a lecturer at the St. Thomas Hospital, London. The fact that Dr. Reid has secured this honorable appointment in the face of a spirited competition will bring to memory, for purposes of contradiction, the sinister suggestion of old Dr. Samuel Johnson, who averred that the pleasantest prospect that greets the eye of a Scotchman is the highroad to London. But here we have a Scotchman who is only too happy to find his way out from London.

TOPICS OF THE WEEK.

THE INFLUENZA EPIDEMIC IN GERMANY.

Yesterday's telegrams from various German districts give some idea of the dimensions which the influenza epidemic has attained. In Dantzic so many teachers and schoolboys are ill that only some of the usual lessons are being given in the high school, and several other schools are closed altogether. Work is partially paralysed, too, in the offices, especially in printing offices. In Hamburg several schools have had to be closed. At Wandsbeck, near Hamburg, 3,000 cases are announced, and three elementary schools are closed.

Professor Leyden, of the Charité, spoke to his students on this subject the other day. He emphasized that influenza is a disease of specific character, by no means deserving the disregard with which it is frequently treated. It must not be placed in the same category as common colds. Its special character was indicated by the suddenness and severity of all its symptoms, especially fever, and above all by its pandemic character. He declared that more than a third of the population were ill at present. He also pointed out that this complaint was very often accompanied by deep mental depression, the patient feeling intensely ill all over in a much higher degree than was usual in common colds. For this reason the treatment of the mind and feelings of the patient deserved the special attention of the physician. He discussed the points of resemblance between influenza and the dengue fever, which has been raging of late in Constantinople, Smyrna, and other Turkish cities, and favored the theory that the former has sprung from the latter, which generally spread from east to west and from south to north.

The *Berliner Klinische Wochenschrift* (Berlin Clinical Weekly) writes: "It can no longer be denied that Berlin too has been attacked by the epidemic, though it is difficult to ascertain how widely it has spread, for most of the cases which go by the name of influenza among the laity are really merely imaginary. Anyone who should reckon every slight attack of bronchial catarrh with fever, such as the season brings with it, or colds in the head and headaches, under this rubric, would have to state a very high percentage of cases in Berlin too. Whoever, on the other hand, demands a stricter diagnosis, especially whoever requires a distinct appearance of the nervous symptoms, along with the varying and complex objective symptoms, with the partly catarrhal, partly gastric, disturbances, will be more cautious with his statistics. All trustworthy observers lay special stress on the fact that there is a striking and characteristic disproportion between the objective symptoms, including even the often high but very transient fever, and the subjective feeling of illness, the weariness and depression. Real cases, however, have also been observed—in the Charité for instance—with absolute certainty, and it has been pointed out that the complaints which are notoriously wont to accompany influenza epidemics—viz., catarrhal and croupous pneumonias—have unmistakably increased. In these cases antipyrin or antifebrin seems to have been universally prescribed, with the effect that the subjective state very rapidly improved."

A committee of eminent men, including several of the most highly reputed physicians, has been formed for the purpose of tabulating statistics of the epidemic in Berlin, and the assistance of the Statistics Office of the city has been secured.—*The Lancet.*

MICRO-ORGANISMS IN WATER.

There is a difference of opinion amongst many chemists as to whether the presence of a large quantity of bacteria or a considerable amount of organic matter in drinking-water justifies as such its condemnation. Waters containing few bacteria and little organic matter have been known to produce distinctly injurious results, while some waters containing much of both appear to be comparatively harmless in their action. Of course, very much depends upon the source of the water and the nature of its surroundings. The fact, however, that organisms believed to be agents in bringing about certain diseases exist in water for a long time, during which their activity is preserved, makes their absence distinctly desirable. Certain operations in nature would seem to indicate this. Investigations have shown that more bacteria are usually present in rivers than in lakes, in spite of the fact that lakes themselves in many cases are more or less polluted by rivers passing through populous towns. In a very interesting paper in the *Zeitschrift für Hygiene*, 1889, 86, B. KRUGER considers that this rapid decrease in the number of organisms may very possibly be due in part to the action of direct sunlight, but in the main to the tendency of water in a comparatively undisturbed state to deposit and precipitate. He therefore carried out a number of experiments with a view to determine how far the removal of organisms was brought about by the mere mechanical deposition of inert matter and also by precipitation as a result of chemical action. The mechanical precipitants employed, all in a state of fine powder and sterilized, were alumina, brickdust, clay, chalk, sand, coke and charcoal. Water obtained from an ordinary service pipe was impregnated with a liquid containing bacillus growth of a species incident to tap water. This was divided into two portions—one for precipitation with the inert substance and the other untreated for the sake of comparison. Experiments were similarly carried out in which precipitation was obtained as the result of chemical action such as is brought about by the addition to the water containing naturally lime, magnesia, etc., of substances like wood ash, sulphate of alumina, and slaked lime. The general conclusion come to by the author from the results obtained is that undoubtedly large numbers of bacteria are carried down by inert substances merely sinking in water, but that the action is very considerably increased when, in addition to mechanical deposition, a chemical precipitation also takes place. The corollary is evident—inert substances do mechanically assist in the precipitation of micro-organisms, but preference should be given to chemical treatment.—*The Lancet.*

PRACTICAL NOTES.

HOW TO LOOK FOR TUBERCLE BACILLI IN SPUTUM.

Ehrlich's method, somewhat modified, is as follows:

Press a little of the suspected sputum between two cover-glasses so as to get a very thin layer. Dry the cover-classes separately, either by moving them through the air or holding over a flame or by passing a few times through the flame. This fixes and dries the preparation. Place some drops of analine oil in a reagent glass half-filled with water, shake, and filter into a watch glass. Add several drops of an alcholic solution of fuchsin or methyl violet to the contents of the watch glass till they are markedly colored. Warm this mixture till it begins to smoke. Place the cover-glass with the dried sputum, face downwards, on the warm liquid and let it float from three to five minutes. Remove and rinse in alcohol, acidulated with nitric or hydrochloric acid, until very slight traces of color remain; then rinse in ordinary alcohol (70 or 80 per cent). Dry the cover-glass as before by holding above a flame, clean it where necessary, add a little pure glycerin and set under the microscope. An enlargement of 400 diameters will show the bacilli if present.—*Col. and Clin. Record.*

EMBALMING.

The best process of embalming is called the "Brunelli Process." The circulatory system is cleansed by washing with cold water till it issues quite clear from the body. This may occupy from two to five hours. Alcohol is injected so as to take out as much water as possible. This occupies about a quarter of an hour. Ether is then injected to abstract the fatty matter. This occupies from two to ten hours. A strong solution of tannin is then injected. This occupies for imbibition from two to ten hours. The body is then dried in a current of warm air passed over heated chloride of calcium. This may occupy from two to five hours. The body is then perfectly preserved and resists decay.—*Sanitarian.*

TREATMENT OF ERYSIPELAS.

DR. KOCH treated numerous cases of erysipelas with the following ointment:

Creolin	ʒ i.
Iodoform	ʒ iii.
Lanolin	℥ i.

This ointment is spread as an even smooth layer over the affected skin and its surroundings, on an area of at least two to three inches to the outside of the inflamed parts. The whole is covered by a piece of mackintosh. Dr. Koch selected creolin in the above prescription because he thought that it was possessed of first-class disinfectant properties, without sharing the dangerous after-effects of carbolic acid. Iodine, which is derived from the decomposition of iodoform, stimulates absorption of inflammatory products. Lanolin has been chosen because it penetrates the skin best of all ointment bases.

DETECTION OF PUS IN THE URINE.

Drop into the specimen of urine enough tincture of guaiac to give it a milky appearance, and heat it a few minutes to 100 deg. Fah. If pus is present, a blue tint will develop. Otherwise the urine may be passed through a white filter, on which is then allowed to fall a few drops of tincture of guaiac, producing, if pus is present, a distinct blue discoloration.—*Pharma. Era.*

CULTURE OF VACCINE VIRUS.

A Russian physician has succeeded in cultivating vacine virus, and finds that the virus, artificially cultivated, is as effective as the genuine, and has the advantage of absolute purity, so that its use involves no danger from scrofula, tuberculosis or other constitutional diseases.—*The Pacific Record.*

FOOD FOR GASTO-ENTERITIS OF CHILDREN.

In the *Lyon Médicale*, a writer advises the following food in gastro-enteritis of infants:

Wheat	1 tablespoonful.
Oatmeal	½ "
Barley	½ "
Water	1 quart.

This is to be concentrated by boiling to one pint, strained and sweetened. The result is a mucilage readily taken by children. In gastro-enteritis the patient should be given small quantities of this mucilage at frequent intervals, and no other food administered until the stools assume their normal color.—*Dietetic Gazette.*

ARTIFICIAL LABOR.

Induction of artificial labor is done simply by a method recently brought out by Pugliatti, but which the translator has practiced many years with satisfactory results. Patient is brought to the edge of the bed, a bivalve speculum is introduced, and an antiseptic injection administered. A clean aseptic, elastic bougie is gently introduced as far into the uterus as it will pass; the remainder is coiled up in the vagina. If pains do not begin in three hours another vaginal injection is given and followed by the introduction of a larger bougie.—*Times and Register.*

SOCIETY PROCEEDINGS.

Obstetrical Society of Philadelphia.

Stated Meeting, Thursday, October 3, 1889.

DR. THEOPHILUS PARVIN IN THE CHAIR.

(*Concluded from page 67.*)

DR. THEOPHILUS PARVIN reported

A CASE OF TUBAL PREGNANCY, WITH SPECIMEN. —PROBABLE DIAGNOSIS, AND REMOVAL PRIOR TO RUPTURE.

Mrs. Mary E. W. was brought to the hospital of Jefferson Medical College, September 19, suffering from a probable ectopic gestation. She is 26 years old, married seven years, and has had three living children, all of whom she has nursed, and during each lactation menstruation has regularly occurred; her youngest child is thirteen months old, and she is now nursing it. About June 29 the usual flow began, but has continued ever since, with brief intermissions, under the use of medicines given by her physician, Dr. Horrowitz. In the latter part of August and in September, she has suffered somewhat from nausea; and this, with some other things, would have led her to believe she was pregnant, had not the hæmorrhage from the uterus been so constant. About September 1 she began to suffer with occasional violent attacks of pain low down in the left side, followed by much soreness; these attacks were especially liable to occur when she lifted her child.

Because of the temporary absence of Dr. Horrowitz from the city, she went some three or four times to the dispensary of the Pennsylvania Hospital, where she was examined by Drs. Baldy and Bradford, who found a tumor on the left side of the uterus, tender and cystic, with a history of almost continuous bleeding for some weeks, there being, however, no signs of any shreds; pain in the lower part of the abdomen; only very meagre symptoms of pregnancy. A probable ectopic gestation was diagnosed and operation urged.

The day that she came to Jefferson Hospital, she had with the hæmorrhage a discharge of small, membranous fragments; whether decidual or not, of course could only be certainly known by microscopic examination. A day or two before some similar fragments were discharged, according to her statement.

Upon examination, I found a tumor adjacent to the uterus upon the left side, the uterus somewhat enlarged, and very great sensitiveness to pressure, both in the vagina and in the lower part of the abdomen, especially at the left side.

The history, the examination, and the previous examinations of Dr. Baldy, with his conclusions, gave me little doubt that the case was one of tubal pregnancy.

Abdominal section was done on September 20, Dr. Baldy being present, and Dr. W. E. Ashton assisting in the operation. The gestation cyst included in the tube was removed and the specimen is now shown you.

The patient's convalescence has thus far been uninterrupted, almost two weeks having elapsed since the operation.

DR. J. M. BALDY reported

A CASE OF TUBAL PREGNANCY, WITH SPECIMEN. —NON-DIAGNOSIS, BUT REMOVAL PRIOR TO RUPTURE.—RECOVERY.

Mrs. G. R., (colored), walked into the outpatient clinic of the Howard Hospital, July 5, 1889, suffering from pain in her abdomen, so similar to that which I have often seen go with a pyosalpinx, that I diagnosed this disease before examining her. The examination revealed a large, apparently tortuous, tender mass, posterior and slightly to the left side, giving a boggy feel to the touch. The diagnosis was verified, a saline purge given, and an immediate operation advised.

One week later a messenger summoned me to the home of the patient, where I found her lying on the bed, suffering from severe pain in the abdomen. She stated that the night before a fit of sneezing had given her a similar pain. She arose from the bed and walked to the table, a distance of about six feet. While standing there she was seized with a severe, cramp-like pain, which doubled her up, and lasted for a few moments. The idea took possession of me that she possibly was suffering from an ectopic gestation. I helped her onto the bed and made a most careful examination, which revealed the following: She had been having children at regular intervals of about two years. She had a child just a year and a half before, since which time her menstruation had been pretty regular. With the exception of an occasional "pain in her belly" she had always been well.

Before coming to me she had been bleeding irregularly for about two weeks. The show was and had been clear blood, without any signs of shreds. Her husband had been away from home for about three weeks. The pain in the abdomen had been there since the bleeding began. There was not the slightest sign of pregnancy, either subjective or objective, nor did she think she was pregnant. A reëxamination of the pelvis showed only what had been before found, viz., a cystic mass, which did not pulsate, posterior and to the left; apparently a distended tube. The uterus was in position of normal anteflexion, and there was a perfectly normal cervix for a multipara. There was an elevation of temperature, and the woman had had chills and creeps. I asked Dr. Hamill to see the patient for me and he verified my examination throughout. Together we decided that it was a case of pyosalpinx, stating at the same time that we had thought of ectopic gestation as a possibility, but were wholly unable to find sufficient data on which to verify our suspicion.

On July 13 I opened the abdomen, with the assistance of Drs. Hamill and Naylor, and in the presence of three or four other gentlemen, and removed a left tubal pregnancy, which I here present to you. As I tore away the adhesions which bound the mass to the pelvic walls, the cyst was ruptured and a teaspoonful of black clots was discharged from the sac itself. It was evidently a pregnancy of the fimbriated end of the tube, which had become adherent to the pelvic wall, the pelvic wall thus forming one side of the sac. The case well illustrates the difficulty, nay impossibility, of at times diagnosing ectopic gestation. In three weeks the patient was sent home, and is to-day in her usual good health.

I would emphasize the following points, viz :—

The case is one of primary or unruptured tubal pregnancy. (There are now four such cases on record from this city alone, viz., Dr. J. Price's, Dr. Goodell's, Dr. Parvin's, and my own.)

The patient is a colored woman, which is rather rare.

The patient did not have a long period of sterility, but was bearing children regularly.

There was at no time a sign of a decidual discharge.

There was at no time the slightest subjective or objective sign of pregnancy.

Dr. E. W. Cushing, of Boston: The subject of extra-uterine pregnancy is one of the greatest interest to me, and I can say, from sad experience, that it is not easy to make a diagnosis. After some obscure symptoms of irregularity of menstruation, etc., a near relative was taken suddenly with a severe attack which, after the event, I felt was due to a tubal pregnancy ruptured into the broad ligament; finally she recovered without operation. This turned my attention to the subject, and I looked up the specimens in the Harvard Medical School, which Dr. Parker photographed, and I published.

In another case, of which I saw the specimen, a gentleman operated for an ill-defined tumor. The cyst was opened after the operation, and a fœtus three-fourths of an inch in length found. There had not been a suspicion of pregnancy.

I believe that almost every one agrees in regard to the difficulties of diagnosis. and I believe that pretty much every one here agrees as to the necessity for surgical treatment; yet as a subject for debate here, I would suggest in opening this discussion that there may be cases where a man may suspect extra-uterine pregnancy, but yet be not sufficiently certain to operate, or not be able to get permission to do so, or he may be unable to do an abdominal operation himself, or secure the services of one that can. I would suggest that under such circumstances the use of the faradic current is not only justifiable but prudent. This would be proper only in the earliest stages, before the fœtus has reached such development that it would leave behind a source of irritation and suppuration. I think that the condemnation of the electric treatment in the early stage has been too sweeping and severe. Certainly the horrible cases which are recorded from attempting to puncture the fœtal sac, especially at a later date are not likely to be repeated.

Dr. Wm. Goodell: In regard to the electrical treatment of extra-uterine fœtation, I must confess that I was theoretically inclined to believe in it. But when I had met with cases of extra-uterine fœtation, and I saw the mass that was present, and the adhesions and injuries which adjacent organs had sustained, I could no longer uphold it. In my opinion electricity should be reserved for those cases in which the woman absolutely refuses any surgical operation, or when the physician is not a laparotomist, and he cannot secure the services of one. The amount of adhesions is, however, so great, and the injury done the appendages so severe, that the woman cannot in any case conceive on that side. This was apparent in the case reported by me to the Society, in which I operated previous to the rupture. In this case, indeed, the appendages of the unimplicated side were so diseased as to need removal. The operation is therefore warranted, if, for no other reason, simply for the diseased tubes and ovaries. I have practically been converted to the belief that electricity, and particularly electrolysis, should not be used in these cases. The electrolytic action is a most dangerous one. Although advocated by Apostoli, the results have been most disastrous in the cases in which it has been tried.

Fifteen years ago, in a case which I now believe was one of extra-uterine pregnancy, I punctured the tumor with an aspirating needle. In a few days septicæmia set in and the woman died.

The injection of morphia, as recommended by Winckle and by others, has met with better success. But while it destroys fœtal life, it cannot cure the injuries sustained by the appendages, for which the best remedy is the knife.

I have had four cases of early extra-uterine pregnancy within a few months, all of which were successful. One I supposed to be a simple case of disease of the appendages, and operated accordingly. It had burst, and without marked symptoms. In another case of ruptured sac, the specimen was perfectly analogous to that presented by Dr. Baldy, and he was present at the operation. The history of the third case I have already given to the Society, and I presented the specimen. I diagnosticated the ectopic pregnancy and operated before rupture. The fourth case was one of interstitial pregnancy, on which I operated the day before I went to Europe. The woman was brought to me by her physician, with the history of hæmorrhages and great suffering, but with none of pregnancy. Her physician thought that the tumor was either a fibroid or a polypus. I found a fluid tumor bulging into the endometrium, and slightly dilating the os uteri. My diagnosis was a necrotic intra-mural fibroid tumor. Using Adams' subcutaneous saw, I cut into the mass, and removed a quantity of grumous blood and broken-down fragments. These latter were examined under the microscope and found to be placental tissue. The subject of extra-uterine fœtation is of great interest, not only before and after rupture, but also in relation to the cases that go to term. I shall never forget the first case of extra-uterine fœtation that I saw. It was the classical case of the late Dr. Parry—the one which led him to write his admirable essay on the subject.

A distinguished surgeon was called in. This was in the days when we made marked distinction between pelvic cellulitis and pelvic peritonitis. He diagnosticated the case as one of pelvic cellulitis. There was heat and great pain, with complete immobility of the womb. The patient did not improve, and I was called in, and diagnosticated the case as one of pelvic peritonitis, which in one sense it was, as the subsequent history will reveal. My treatment was not satisfactory, and I lost sight of the case. Several weeks afterward, while I was confined to my house for a few days by an illness, Dr. Parry came to see me. He sat down by my side, and after asking about my health, he referred to this case, and pointing his long forefinger at me, said, "You have made a great blunder." He then told me that he had been called in the day before to see the case, and that he considered the case one of normal pregnancy, for he had heard the heart sounds with the utmost ease; in fact, had never heard them so distinctly before. I said to him: "Dr. Parry, of course you are right in the theory of pregnancy; but depend upon it, there is something wrong, for I can hardly think that either Dr. —— or myself could have made such a mistake without some good reason for it." The time for labor came, but it did not set in. Then the death of the child occurred. Dr. Parry was now again sent for, but this time he was unable to find the os uteri, so he sent for me. With great difficulty I found the cervix above the pubic bone. We then made the diagnosis of retroverted gravid uterus. At the next visit, it intuitively flashed across my mind that it was a case of extra-uterine fœtation, and then the case was clear enough. To clinch the diagnosis, Dr. Parry introduced a hypodermic syringe needle and drew off some amniotic fluid. In a few days the head bulged down into the vagina, and we could distinguish even the sutures. We wished to incise the vagina and deliver the child with forceps; but the woman refused an operation, and died. At an autopsy, Dr. Parry withdrew the sac and fœtus, and exhibited them to this Society. Not long after this I saw a second case. The woman had passed full term, the child had died, and yet labor did not come on. Her physician, much puzzled, called me in. In this case the cervical canal was open, and suspecting extra-uterine pregnancy, I passed my finger into the uterine cavity and found it empty. The case was seen by one or two other physicians in consultation with us. We were anxious to operate, but the husband would not permit it, unless we could assure him positively that his wife would recover. While waiting the woman suddenly died.

The third case I saw a number of years ago in a mulatto. The child was living at the time that I operated. There was no difficulty, either in the diagnosis or the operation. The child, being hardly viable, gasped a few times and died. I did not dare to remove the placenta, and as the umbilical cord was very large, I made the mistake of leaving it in the lower angle of the wound as a drainage tube. The woman died a few days later, and at the autopsy we found the liver and lungs riddled with pyæmic abscesses.

I operated on another case in which the fœtus must have died at the age of six months. The woman was perishing from blood poisoning. She was emaciated, had high temperature and night sweats. Pus was evidently present somewhere, and I diagnosticated the tumor as a suppurating ovarian cyst. What perplexed me was great resonance in front. At the operation this was explained by the presence of the gases of decomposition. Excessively fœtid pus escaped. I removed the fœtus, the bones of which, with the scalp and umbilical cord, were the only parts intact. The placenta was not to be found. The woman died suddenly from supposed heart-clot, after a violent altercation with her husband.

Not long after I was called to Mount Holly to see a case which had been correctly diagnosticated by the physician. I removed a petrified seven months' child. The patient had albuminuria, but did well until the eleventh day, when uræmic convulsions set in, and she died comotose. All these operations were performed before the days of antiseptic surgery, and I have not since seen a case of advanced ectopic gestation.

I believe that Tait is correct in explaining these advanced cases by the rupture of the tube and the escape of the unbroken gestation sac into the fold of the broad ligament. The behavior subsequently is precisely like that of an intraligamentary ovarian cyst.

In regard to early diagnosis, I should say that the most common symptom is the arrest of menstruation for one or two periods, followed by irregular uterine hæmorrhages. It is true that pelvic colic is a common symptom, but not so common as the other. But I do not know that it is necessary to make an absolute diagnosis; given a woman with the exacting symptoms of a suspected extra-uterine fœtation, who has a displacing tumor on one side of the womb, are we warranted in operating merely to remove the tumor, whatever its nature? Do we not constantly, on less provocation, remove pelvic tumors whose character is determined only by the operation? Instead of an extra-uterine fœtation, we may find pyosalpinx, or an ovarian abscess; but were we not in duty bound to perform the operation, even at the risk of an error in diagnosis?

Dr. Barton C. Hirst: I was some time ago called to a case in consultation which presented a clear history of extra-uterine fœtation; cessation of two periods, hæmorrhage with the discharge of deciduous membrane, a distinct tumor to one side of the uterus, and the subjective signs of pregnancy, with swelling of the breasts and vomiting. Dr. Hamill and myself urged operation, but the family being dissatisfied, we were discharged. Another physician was called, and Dr. Parrish was consulted. He recommended the use of electricity, and a current was applied with relief of the symptoms, and, I believe, complete cure of the patient. There may be a varicose vein in the broad ligament which having burst may present all the signs of extra-uterine fœtation after rupture of the sac. I have had two such cases; in one case I opened the abdomen and found a blood-tumor in the layers of the broad ligament, and considerable blood in the peritoneal cavity. From the history and physical signs, I am quite sure that this was not an extra-uterine pregnancy.

I saw, in consultation, a fatal case of this kind after labor a short time ago. The labor was a difficult one and ended by craniotomy. There was rupture of the vein in the broad ligament. The bleeding was first between the layers of the broad ligament. This then ruptured into the peritoneal cavity and the woman died. There was no rent in the uterine wall. Such cases might be mistaken for extra-uterine fœtation.

Dr. M. Price: In most of these cases, all that we can make out is that there is something which should be removed; but as to a distinct diagnosis of extra-uterine pregnancy being made, I do not believe that it is done one time in ten. Dr. Parvin, in his case, would not have been surprised to have found distension of the tube from any cause. In a case which presented all the symptoms of extra-uterine pregnancy, and where I expected to find this condition, I found a pair of large pus tubes. I have seen twenty or twenty-five cases of extra-uterine pregnancy, nearly all of them ruptured tubal pregnancies. It does not interest us a particle whether the cases were diagnosed or not. There is trouble present of such a serious character that it does not become us to lose a single moment. Most of these cases come into the coroner's and not the surgeon's hands. Delay in operating is adding 10 per cent. to our mortality. It is our duty to operate on the first indication, and if we are mistaken, to thank God for the absence of so serious a condition.

Dr. Joseph Hoffmann: I have twice operated for extra-uterine pregnancy and did not find it. I operated once for something else and found extra-uterine pregnancy. The first case presented the signs of extra-uterine pregnancy to even a more marked degree than that of Dr. Hirst— coming on after a sterility of eight years, a retroverted mass, flooding and violent pain. At the operation I found two pus tubes. She was pregnant and miscarrying and completed it after the operation. The second case was almost on a par with this. In the third case I operated for pus tube and found extra-uterine pregnancy. The trouble is, that these men who claim positive diagnosis do it from a single case, which, though by no means certain at the time of operation, resolves itself into an absolute diagnosis when they come to publish it. It is the dreams and the nightmare of desire to publish something startling, which make the diagnosis. There are such a variety of conditions in the pelvis giving rise to these symptoms that it is impossible to say absolutely what we have. I have gone over Dr. Thomas' list of cases and found that, so far as absolutely correct early diagnosis is concerned, it is worth nothing. In only one case, if my memory serves me, was there a post-mortem. In three or four in which death occurred there was no post-mortem; and in the others, where the current was used, the diagnosis in most of them was made after symptoms of rupture.

The treatment by the electric current is advocated by Reeves, who strangely falls into a fallacious argument. He says that if we use electricity in cases where there are symptoms of extra uterine pregnancy, and these symptoms disappear after the use of the current, why not call them extra-uterine, as we do in other diseases, where diagnosis is made, and a line of treatment adopted with good results, and illustrates the argument by the use of mercury in syphilis. If the effect of electricity was as well established as that of mercury in syphilis, the argument would be more logical. When we feel that rupture has occurred, electricity is a dangerous thing to trifle with. The principal danger is in delay. The longer the growth is allowed to continue, the greater the danger from adhesions, rupture and complications which cannot be foreseen.

Dr. J. Price: There are some interesting facts in connection with the history of this subject. It is curious that a few years ago a man with an experience of one doubtful case should discuss the subject before the American Gynæcological Society. It is also curious that the same man, with a single experience with a woman sterile five years, having pelvic pain, irregular menstruation, a delayed period for six days, and recurring attacks of pain, should claim to have killed the fœtus of an extra-uterine pregnancy by the use of electricity for ten *séances* of half an hour's duration each, on consecutive days. Then follows another man with a history of one case, and another in consultation. The man with an experience of one case used electricity, and the case passes into the hands of another, who writes to the first that he is going to operate. The first physician at once writes not to do it, as he has killed the fœtus; while the operator already holds in his hands a large hydrosalpinx.

Dr. Baldy, in a recent paper in the New York *Medical Record*, lays down certain propositions, and makes the diagnosis easy in many cases. He has forgotten that many of these patients die as if with a ruptured aneurism before the woman suspects that anything is wrong. These cases go to the coroner. In the cases that reach the surgeon the hæmorrhage has not been so great.

It is interesting to refer, in this connection, to the cases of Dr. Edis and Dr. Bantock. Dr. Edis found on one side an extra-uterine pregnancy, and on the other a small ovarian cyst. Dr. Bantock found on one side an extra-uterine pregnancy, and a pus tube on the other. I have here an enormous tubal pregnancy, with rupture at the pavilion, and the abdomen filled with blood. On the other side was a beautiful hydrosalpinx.

One of the prominent cases on record I saw a few hours before the operation. We agreed that there was a doubtful history of extra-uterine pregnancy, but no prominence was placed upon this point. It might have been a small ovarian or dermoid cyst, or a large hydrosalpinx. When the abdomen was opened, every one expressed great surprise at the presence of tubal gestation. The same case has flourished over the world as a case of positive diagnosis. This is the case in which letters were written inviting different men to the operation; but the letters were written after the operation. This case will not bear close scrutiny. If we look over the Transactions of the American Gynæcological Society, we shall find that the men who have had the least experience speak most positively.

DR. NOBLE: Monday, a week ago, I removed an extra-uterine pregnancy which was rather unusual in the conditions present. In my case, the woman had skipped the period in August. There was nausea, and other symptoms of pregnancy. In September, a week before the sickness should have occurred, she began to flow freely; then had cramps and fainted in the street, and afterwards had fainting attacks. I saw her two weeks after the beginning of the flow. At one time, while in the water-closet, she passed what she thought to be a large clot. The opinion of her physician was that she had had a miscarriage.

I found a mass on the left side pushing the womb to the right. I recommended operation, which was not consented to for some days. In the meantime the hæmorrhage continued. The patient was seen by Dr. Kelly, and we agreed that it was almost certainly an extra-uterine pregnancy. At the operation I found the blood in the peritoneal cavity. The blood was almost entirely clotted. The ovum was attached not far from the uterus. The hæmorrhage had taken place in the tube, and the clots had been forced out through the fimbriated extremity. On the other side there was a hydrosalpinx. She had also had the rectal tenesmus. She has done well since the operation.

DR. B. F. BAER: I wish to go on record as one who believes that it is as easy to diagnose extra-uterine pregnancy as to diagnose any other condition within the abdomen (as hydrosalpinx or pyosalpinx) positively. But the man who says he can make such a diagnosis positively, is an unsafe man. Dr. Taylor assisted me some five years ago in a case of extra-uterine pregnancy in which the diagnosis was made. The fœtus had advanced to the age of two and one-half months, and the symptoms which have been mentioned were present. There was enlargement of the uterus, and I heard the placental bruit. I felt fluctuation in this sac, and was almost certain that I detected ballottement. I, however, operated in an unscientific way, cutting through the vagina. I got the embryo, but the patient died.

DR. M. PRICE: Did I understand Dr. Baer to say that he heard the placental bruit at two and one-half months?

DR. J. M. BALDY: How did Dr. Baer detect ballottement at this early stage?

DR. BAER: I have heard this murmur in normal pregnancy at two and one-half months. I believe that it is not yet clearly understood whether the murmur is placental or simply a uterine murmur. It is, however, due to pregnancy.

In regard to ballottement, given a sac filled with liquor amnii and an embryo dangling in it, I think that ballottement could be readily detected.

DR. WILLIAM GOODELL: Dr. Baer is right in regard to early ballottement. This is said to be detected much earlier in extra-uterine fœtation than in natural pregnancy.

DR. J. M. BALDY: I know there are cases on record, but I doubt the occurrence of ballottement in these. It could not possibly have occurred in such specimens as that presented by Dr. Goodell a few months ago, or those of Dr. Parvin and my own presented to-night. And so it has been with all the cases I have seen. Reference has been made several times to a paper of mine in the New York *Medical Record*, in which I lay down three propositions. The first is that, in a certain proportion of cases of extra-uterine pregnancy in the early stages, the diagnosis is easy and unmistakable. The second, that in a certain (quite large) proportion of cases, sufficient symptoms are present to more than warrant a diagnosis of extra-uterine pregnancy, such a pregnancy not being present. The third, that in a certain other proportion of cases the symptoms, until rupture has occurred, are entirely wanting or are of such a dubious character as to in no wise warrant such a diagnosis. These propositions have been abundantly sustained by the cases reported to-night. Cases have been reported in which the diagnosis was made and the condition found, and there are enough of these cases on record to show that the diagnosis can be made at times. Then we come to the second group of cases, in which the diagnosis is justified by the symptoms, but something else is found. This I sustained by cases of my own, and it has been more than abundantly substantiated by cases reported here to-night by Drs. Goodell, Hirst, J. Price, M. Price, and Hoffman. Dr. Johnston, of Washington, has reported a similar case. The third proposition is also sustained by cases reported to-night (in addition to my own) by Dr. Hoffman, Dr. J. Price, and others. If there are well substantiated cases in which the diagnosis was not made and extra-uterine pregnancy found; and again, if we operate for extra-uterine pregnancy, the symptoms justifying such a diagnosis, and something else is found, I cannot see how any sensible man can claim that it is possible to make a positive diagnosis. I agree with Dr. Hoffman that Dr. Thomas' cases are utterly worthless from a diagnostic point of view; nor does Dr. Thomas himself hold that it is always possible. The men who claim that a positive diagnosis can be made have most signally failed. For instance, the case of Mann, of Buffalo, which went into the hands of Wylie, who operated and did not find ectopic gestation; the case which Buckmaster, together with other medical talent, treated with electricity, even to puncturing, I think, and finally pronounced normally pregnant; the case of Kelly, of Philadelphia, the diagnosis of which case has to-night been denied by two eye-witnesses, as well as others.

It is noteworthy that the men who claim the most on this subject, have had the least experience.

BOOK REVIEWS.

The National Medical Dictionary, including English, French, German, Italian and Latin terms used in Medicine and the Collateral Sciences, and a Series of Tables of Useful Data. By John S. Billings, A.M., M.D., LL.D., Edin. and Harvard, D.C.L. Oxon., Member of the National Academy of Sciences, U. S. A., etc., etc. With the Collaboration of W. O. Atwater, M.D., Frank Baker, M.D., S. M. Burnett, M.D., W. T. Councilman, M.D., James M. Flint, M.D., J. A. Kidder, M.D., William Lee, M.D., R. Lorina, M.D., Washington Mathews, M.D., C. S. Minot, M.D., H. C. Yarrow, M.D. Philadelphia: Lea Brothers & Bo., 1890.

It was fitting that with the advent of the new year a work of such value should be presented to the medical profession. From the exceptional ability of those to whom its preparation had been committed the public had just reason for anticipating the production of a work of unusual merit. We congratulate the editor and his corps of collaborators upon the fact that such anticipations are fully realized. The profession is deeply indebted to the author for this invaluable contribution to American medical literature.

The series of tables, ten in number, with their various subdivisions, published in connection with the work, will be found of great practical value, and evince a wise discrimination of what is most needed in the matter of ready reference. We only purpose at this writing to announce the publication of this great work, and assure our readers that it is within their power to make an invaluable addition to their libraries by the purchase of the National Medical Dictionary. In a later number of The Journal we shall take occasion to refer more fully to its special merits.

In the publication of the Dictionary the well known firm of Lea Brothers & Co. have fully maintained the credit of a house which for more than two generations has been foremost in the presentation of medical publications. In every department and every detail there is such evidence of skill and exquisite taste as not only to redown to the credit of the house but also to the honor of a prominent American industry.

Eating for Strength; or, Food and Diet in Their Relation to Health and Work. By M. L. Holbrook, M.D., Prof. of Hygiene in the N. Y. Med. College and Hospital for Women; Editor of the *Herald of Health*, etc. New York: M. L. Holbrook & Co. Cloth, Pp. viii, 246. Price $1.00. Chicago: A. C. McClurg & Co.

In this book the various food products are carefully analyzed and compared with a view to pointing out the most eligible articles of diet in both health and disease. The writer is evidently a good deal of a vegetarian and takes particular pains to emphasize the importance of adding largely to our diet the vegetable products, to the partial exclusion of meat, as tending both to the promotion of health and economy. Several hundred recipes for the preparation of foods and beverages are included in the work, which is written throughout in a very instructive and entertaining manner.

THE INTERNATIONAL MEDICAL ANNUAL FOR 1890 is now in press and will shortly appear from the publishing house of E. B. Treat, New York. The prospectus shows a list of thirty-seven editors and gives promise of improved work in the present edition. The volume will give a summary of new remedies arranged in alphabetical order, together with a *résumé* of new treatment and medical progress. The work will doubtless be an important addition to medical literature. It will be published in one volume of 600 pages. Price $2.75, post free.

A CLINICAL ATLAS OF VENEREAL AND SKIN DISEASES, including Diagnosis, Prognosis and Treatment. By ROBERT W. TAYLOR, A.M., M.D., Surgeon to Charity Hospital, New York, and to the Department of Venereal and Skin Diseases of the New York Hospital, etc. Illustrated with 192 Figures, many of them Life-size, on 58 beautifully colored Plates. Also many large and carefully executed Engravings through the text. Parts VII and VIII. Pp. 319–427. Philadelphia: Lea Bros. & Co. 1889.

These are the last two numbers of Taylor's superb work and include the following subjects: Scabies, Dysidrosis, Miliaria crystallina, Impetigo contagiosa, Eruptions of Iodic Origin, Bromine Eruptions, Sycosis, Molluscum Sebaceum, Ichthyosis, Leprosy, Lichen Planus, Lichen Ruber, Lichen Ruber Moniliformis, Lupus Vulgaris, Molluscum Fibrosum, Scleroderma, Acne Rosacea, Rhinoscleroma, Elephantiasis, Leucoderma, Chloasma, Alopecia Areata, Keloid and Xeroderma Pigmentosa.

This concludes a work of the greatest value to the general practitioner and surgeon, for by its aid the diagnosis of skin lesions, which is often attended with so many difficulties, becomes comparatively simple and easy. A more helpful work could scarcely be chosen for a physician's library.

ASSOCIATION NEWS.

American Medical Association—Forty-first Annual Meeting.

Section of Laryngology and Otology.

All those who desire to read papers before the Section of Laryngology and Otology, at the next meeting of the American Medical Association, to be held in Nashville, Tenn., May 20–23, are requested to send the titles of the same to either of the undersigned before February 15, 1890.

JOHN O. ROE, M.D., Chairman,
28 N. Clinton St., Rochester, N. Y.
FRANK H. POTTER, M.D., Secretary,
273 Franklin St., Buffalo, N. Y.

MISCELLANY.

LETTERS RECEIVED.

Dr. H. J. Defrees, Millwood, Ind.; Parke, Davis & Co., Detroit, Mich.; Medical and Surgical Sanitarium, Battle Creek, Mich.; Egan Imperial Truss Co., Ann Arbor, Mich.; Dr. L. Belknap, Battle Creek, Mich.; Dr. A. B. Judson, New York; Dr. J. McGinn, Washington, D. C.; Dr. G. H. Gibson, Denver, Col.; Dr. Walter Wyman, Dr. L. C. Loomis, Washington; Dr. J. H. Manley, Gustave E. Stechert, New York; E. P. Donnell Mfg. Co., Chicago; Fairchild Bros. & Foster, J. Walter Thompson, New York; Dr. Archibald Church, Chicago; Dr. S. A. Skinner, Hoosac Falls, N. Y.; Dr. Dudley P. Allen, Cleveland, O.; Dr. W. C. Owen, St. Louis, Mo.; Mrs. Stinson, Norristown, Pa.; R. A. Robinson & Co., Louisville, Ky.; E. Merck, New York; Mr. M. R. Ledberry, Detroit, Ill.; The Imperial Granum Co., New Haven, Conn.; The Kenyon News and Postal Subscription Co., Chicago; Dr. Wm. W. Pearce, Waukegan, Ill.; Dr. Wm. N. Boerstler, Peninsular, O.; Dr. F. D. Green, Richmond, Ind.; Mrs. E. T. Bruen, Philadelphia; Dr. G. E. Browne, Las Animas, Col.; Medical Press Co., Philadelphia; A. H. Roffe & Co., Boston; McKesson & Robbins, New York; Lambert Pharmacal Co., St. Louis, Mo.; Horlick's Food Co., Racine, Wis.; The Upjohn Pill and Granule Co., Kalamazoo, Mich.; Dr. J. Stout, Ottawa, Ill.; Landa, de St. Sauveur & Co., Chicago; Paris Medicine Co., Paris, Tenn.; Dauchy & Co., New York; Detroit College of Medicine, Detroit, Mich.; Sharpe & Dohme, College of Physicians and Surgeons, Baltimore, Md.; Doliber, Goodale & Co., Boston; Rio Chemical Co., St. Louis, Mo.; Buffalo Med. and Surg. Journal, Buffalo, N. Y.; J. Movius & Sons, I. Haldenstein, New York; Dr. A. B. Campbell, New Holland, Ill.; Dr. N. D. Guerry, Trinity, Miss.; Canton Surgical and Dental Chair Co., Canton, O.; Dr. F. S. Bascom, Salt Lake City, Utah; Dr. S. K. Gifford, Haverford College, Pa.; Dr. S. P. Deahofe, Potsdam, O.; Dr. L. J. King, Visalia, Cal.; Geo. F. Lasher, Philadelphia; Dr. L. C. Swift, Ft. Barrington, Mass.; Worcester District Medical Library, Worcester, Mass.; Dr. W. E. Casselberry, Chicago; Dr. Henry B. Baker, Lansing, Mich.; Chesebrough Mfg. Co., New York; P. W. Garfield, Cleveland, O.; Dr. John Casson, Alexandria, La.; F. B. O'Connor, Brooklyn, N. Y.; New York Post-Graduate Medical School, New York; Battle & Co., St. Louis, Mo.; Dr. A. Palmer Dudley, New York; Dr. J. A. Maloney, Washington.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from January 4, 1890, to January 10, 1890.

By direction of the Secretary of War, ordinary leave of absence for two months is granted Capt. Junius L. Powell, Asst. Surgeon, in extension of the leave of absence on account of sickness granted him in S. O. 258, November 5, 1889, from this office. Par. 1, S. O. 1, A. G. O., January 2, 1890.

By direction of the Secretary of War, leave of absence for six months on surgeon's cestificate of disability, with permission to go beyond sea, is granted Capt. Louis M. Maus, Asst. Surgeon. Par. 13, S. O. 4, A. G. O., January 6, 1890.

First Lieut. Freeman V. Walker, Asst. Surgeon U. S. A. (Jackson Bks., La,), is granted leave of absence for one month on surgeon's certificate of disability. Par. 7, S. O. 5, Div. Atlantic, January 7, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending January 11, 1890.

P. A. Surgeon Robert Whiting, detached from the "Minnesota" and to the "Dale."

Asst. Surgeon Geo. McC. Pickrell, detached from the "Dale" and to the "Minnesota."

THE
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ORIGINAL ARTICLES.

THE PAST, PRESENT AND FUTURE OF ABDOMINAL AND PELVIC SURGERY.

Read in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY JOSEPH PRICE, M.D.,
OF PHILADELPHIA, PA.

Under this title I purpose to discuss briefly the salient features of pelvic surgery at and before its recognition as a legitimate practice, its aims and accomplishments, as now improved, and the possibilities of its attainments by future perfectionment. My paper shall be neither historical, statistical, nor bibliographical, but shall be a concise statement of facts and practice, and of the lines of improvement as I see them.

Standing, as we now do, amid the wonderful successes of the present surgery, we are prone to accredit nothing to the past save its feeble efforts and frequent failures. This is neither just nor reasonable. Pioneers in every line of work, scientific or mechanical, or both, have the rubbish of ages to clear away, the superstitions of all who preceded them, and the prejudices of those who surround them. No man controlled in his actions or habit of thought by a prejudice, doubts for an instant that it does not protect him from error. Here, then, was the field upon which were fought the first battles of pelvic surgery. The first operators, had they defiled the temple, could have suffered no greater condemnation than was heaped upon them for invading the sanctity of the abdomen. The horns of a mad bull might tear it, but the surgeon's knife must never enter it! The early operators must needs, then, tear down opposition built upon superstition, ignorance and prejudice, and lay the foundations upon which is reared the successes of to-day. Their mistakes made possible our successes; their trials made possible our accomplishments; their failures warn us against errors. The first great advance in abdominal and pelvic work, upon which depended all subsequent successes, was the intraperitoneal treatment of the pedicle. This fact stands out too boldly to necessitate a moment's argument. Then followed the introduction of Listerism, which, fundamentally correct in idea, wrought death by chemicals instead of dirt. Even now this opinion may be disputed; but ere long it will be the rule to keep harmful disinfectants as far away from the abdomen as fetid pus or other filth. It stands proven that cleanliness may be and constantly is obtained without the aid of any chemicals whatsoever. This opinion I have always held, and have never, in any operation of my own, used chemical disinfectants in any form whatever.

Now, as we have learned all this from the experience of our predecessors, so much of our present success is due to the appreciation of early operation, both in obscure disease and well-marked lesions. That "procrastination is the thief of time," and fills unnecessarily many a grave, was too long in being recognized as a surgical maxim. Even yet the "conservative surgeon," conserving his fees while his patient loses her life, hangs upon the skirts of Progress and impedes her strides. Let no man deceive himself into imagining that delay is conservatism. Delay is the fool's paradise, where laggards wait for luck, instead of pluck, to carry them to success. If any man doubts the advantages of early operation in all phases of abdominal and pelvic disease, be he surgeon, general practitioner, or electropathist, I would urge upon him to read Dr. Bantock's "Plea for Early Ovariotomy."

But now that we have learned to operate early, we have come to modify our methods of operating. Formerly the array of instruments marshalled at an abdominal section was appalling to the spectator and confusing to the surgeon; several tables did not suffice to hold them; their names could be held only by the maker's catalogue, ranging, as they did, from the vaccine scarifier to the amputating knife. Now the rule is simplicity; the fewer the instruments, the less is the chance for dirt and confusion, and the greater that for speed. By speed I do not mean haste and hurry. Quick, earnest, thorough work, with no time lost in discussing pathology and specimens, no considering of methods, no delay over the less important portions of the operation, are vast factors in obtaining good results. We have now not only learned to work, but to recognize what is best done and what is best avoided as a rule.

Formerly "death by peritonitis" was a constant report after section. No cause could be assigned in many instances. Finally it was divined that three causes were at work giving these bad results: Hæmorrhage from adhesions, hæmorrhage from badly tied ligatures, and an imperfectly cleansed abdomen and pelvis. This discovery brought into use the drainage tube and pelvic irrigation, which at the present time has advanced to absolute flushing with a gravity tube. I can not too strongly urge upon operators the value of this in washing up débris from the pelvic cavity, that otherwise would remain to infect the patient. Notwithstanding the cry of alarm lately raised by a French operator as to the procedure, his fears can be passed over as groundless and the practice confidently recommended as harmless and indispensable to perfect results in many cases. Cleanliness, water and good surgery are the very best of all antiseptics.

Now, as débris was found to be the cause of many bad results, so hæmorrhage from bad tying of the pedicle was the cause of great mortality. This led to careful investigation of the after-conduct of both ligature and stump. It was found that the stump did not slough, but organized, and that the ligature became encysted. This fortified the practice of leaving a good button without fear, and led to the employment of as small a ligature as possible; or, rather, it is now leading to this. Great or heavy ligatures are dangerous in being less likely to tie well, and in being less apt to become encysted.

The treatment of incipient peritonitis as now generally adopted by abdominal surgeons, if practiced by the general profession, would be a distinct advance in general medicine. I refer to the use of saline purgation, or, if that is impracticable, to the free use of small doses of calomel. The efficacy of this treatment is so well attested that no man should hesitate to use it in threatening cases, general or surgical. Experience has shown that violent attacks of peritonitis, almost or quite general, will yield to this treatment, though the attack may be due to breaking pus-tubes; the abdomen, painful to the lightest touch and tight as a drum, will become soft and natural. The opiate treatment can give no such showing as this.

From the standpoint of present knowledge the causation of pyosalpinx as related to gonorrhœa is worthy of distinct mention. With its after-effects in view, gonorrhœa in women must receive much more careful treatment in the future than it has in the past. It has been regarded in the female as a disease of only the slightest importance; henceforth it must be considered as being the possible cause of the most serious pelvic disease found in women. Only those fail to recognize this fact who blindly follow tradition or refuse to face facts.

Another pelvic disease whose treatment is revolutionized, and whose surgery now remains to be written, is perityphlitis, simple or complicated with appendicitis. Heretofore the treatment has been tentative; now it is positive and radical, displacing weeks of suffering by speedy cure. The surgery of intestinal obstruction needs in great part re-writing in most of our text-books. Patients are no longer permitted to die of volvulus, stab or gun-shot wounds. Within the last year Senn's hydrogen test has been a giant stride in diagnosis, while the treatment, now that anastomosis offers a comparatively simple measure for serious lesions, will be much safer.

But while there has been a positive advance in the lines indicated, even during the last few months in other directions, there has been a positive retrogression. I refer to the attempted substitution of electricity for positive surgical interference in abdominal and *pelvic* disease. Like all other novelties and promised cure-alls, electricity has gathered about it men who have failed, men who are fearful, by reason of the bad results of others, and men who reach out for any treatment that promises the most with the least trouble and worry. Pelvic surgery is not play, nor should those who are children mentally attack it. If there be a better treatment than the knife for the numerous pelvic troubles we have to deal with, we should welcome it as lessening our work and adding to our days.

What I demand of the electrical claimants is to furnish proof of their results. When I am called finally to operate upon a patient who has been for weeks under the treatment of currents and counter-currents, and find her no better and her adhesions reduced not one jot, not only no better, but worse, must I accept the reports of cures in identical cases simply on the affirmation of enthusiasts, often incapable of making a correct diagnosis?

Positive surgery is sure of its ground, knows what it can accomplish by what it has done, and refuses to yield its vantage on mere theory and mere assertion. To a man who has had some measure of surgical success these electropaths exclaim: "Not every one can expect such results, nor can every one do pelvic surgery; something must be left for the average surgeon." Flattering to the true surgeon as this may seem, it is revolting. The same argument would justify counterfeiting. Again they say: "Electricity is in its infancy in application; we do not know its possibilities, nor its limitations." If there is any limitation to its results, as claimed, I, for one, would like to know them. Two or three conditions are certainly all for which it has not been claimed as a remedy in abdominal or pelvic surgery. For an infant its prowess and accomplishments are most wonderful. That some successful surgeons have identified themselves with this treatment is no argument for its general acceptance. Practitioners from the regular school have deserted to homœopathy, yet the vast majority of us believe that homœopathy is a delusion. So with electricity; Keith may advocate it, yet this does not prove Keith's surgery a failure, nor the abandonment of his art a logical proceeding. His success in the surgery of fibroid tumors was marvellous, considering the kind of cases he dealt with. Electricity has no conquests to boast with such cases as these. The error is in supposing that hysterectomy for minor tumors is as fatal as in Keith's terrible cases, and that because electricity is capable of producing electrolytic effects outside of the body on small growths, it is capable of acting within the body, where the strength of the current is necessarily limited and the resistance great.

In the light of all this we must demand positive proof, all the more because those who apply the treatment are not in harmony as to the reason for the results claimed. Some affirm it is the electrolytic effects, while others hold to the mechanical result of puncture to originate a change that then goes on of itself. Again, some maintain that the action of the current is simply peripheral, while others insist upon a through-and-through action by reason of a "transport of elements." Such a divergence in essentials must be reconciled in any theory before it can be recognized as scientific. All I need say of this plan of destroying and curing a variety of diseases is that it has many drawbacks, and is so inferior to other and established methods that it should never be adopted; the results are strictly unsatisfactory.

Leaving this matter, I must refer briefly to the surgery of ectopic gestation. In no other fatal accident has the treatment undergone such a change as in this. After rupture there is no question as to treatment. Tait's wonderful success has established the rule: *Open the abdomen, tie the broad ligament, clean out the peritoneum, and drain.* There is no uncertainty as to the treatment of this murderous accident. All other methods are unscientific and crude in comparison with this, the safest and most perfect of our surgical triumphs. Before rupture we are again confronted by the electrical theorists, who here, as before, claim more than they prove. It is worthy of comment that, with few exceptions, the men who work entirely outside of the abdomen are most skilful in diagnosticating internal troubles. I believe I am safe in saying that not one-fourth of the cases diagnosticated as ectopic gestation, cured by electricity, have ever been verified; while it is a well-known fact that most of all the cases primarily judged ectopic either turn out normal, or else are not pregnancies at all. While this is so, neither the value of electricity as a feticide, nor the after-results of its application, can be intelligently discussed.

One other operation requires notice. I refer to the so-called improved Cæsarean section. The success of this operation as now practiced is largely due to the same factors of improvement as make other abdominal operations less fatal when compared with earlier attempts. Sænger's introduction of the peritoneum into the line of suture need not be considered as really indispensable, as he himself admits its omission when there is no marked contraction of the peritoneum, nor bulging of the uterine tissue. It is questionable whether any Cæsarean section should be done without entire removal of the uterus, thereby saving the mother the danger of a second operation. The removal of the pregnant uterus, besides being a speedier operation, is a safer one. It is right, I think, to give the mother the benefit of every chance.

Briefly considered, the future of abdominal surgery must, so far as improvement is concerned, rely on such steps as will simplify technique and render operation still speedier. That a better anæsthetic than ether may be discovered, or a means by which chloroform may be safely used, is an end earnestly to be desired.

In intestinal operations the general ability to apply sutures and resect rapidly must be the requirements of success. Too many failures in intestinal suturing is the greatest cause of mortality in these cases.

EPILEPSY CAUSED BY INTRA-NASAL DISEASE.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889

BY FRED. S. CROSSFIELD, M.D.,
OF HARTFORD, CONN

Within a few years certain nervous phenomena, the causes of which have not been positively ascertained, or have been attributed to other organs, have finally been traced to some existing disease within the nasal passages or pharynx.

Hay fever, or hyperæsthetic rhinitis, manifests itself in a hyperæsthesia of the mucous membrane of the nose, or in an irritable condition of the nerve filaments distributed to this membrane. The existence in the nose of well-defined sensitive areas has been demonstrated. The application of the galvano-cautery to these spots is often successful in permanently curing this distressing disease.

Since the report of a case of asthma from intranasal disease by Voltolini in 1871, numerous other cases of a like nature have been reported from time to time by various observers. I have no doubt, as time goes on and nasal surgery becomes more thoroughly and generally understood, we shall be able to trace other nervous phenomena heretofore mysterious to pathological malformations of the nose or naso-pharynx.

In February, 1886, a young man consulted me with the following history: Nationality, American; age, 20; occupation, an accountant; habits faultless. He was considerably emaciated, complexion sallow, had a hacking cough, which at night became paroxysmal and so severe as to greatly interfere with sleep. Headache almost constantly, night sweats occasionally, appetite varying, but most of the time poor. For six years had an epileptic seizure about twice a month, sometimes oftener. The family history was exceptionally good. He was very ambitious, but had no confidence in himself whatever. He shunned society, did not dare to go into any public gathering; seemed to be in constant apprehension.

During these six years he took bromides in some form most of the time, with cod liver oil, hypophosphites, and various cough mixtures, without any apparent benefit. Having exhausted about every known means for relief, he was sent to me, with the above history. He thought he had consumption, and his general appearance indicated it. His chest expansion at this time was but 1½ inch. By the most careful and painstaking examination of the lungs, I found nothing to warrant the suspicion of consumption.

Large and small mucous râles were heard indistinctly on both sides of the chest; they were inconstant and changeable as to situation. Heart normal. The epileptic attacks being the most distressing trouble, and increasing in frequency, I very naturally directed my attention to this condition. But notwithstanding the administration of bromides in various doses, with good tonics and nutritious diet, the attacks occurred with about the same regularity, and became rather more severe in character.

In one of his visits to my office the young man seemed to be breathing with some difficulty. Upon close questioning, I ascertained that for years he had breathed almost entirely through the mouth. Becoming habituated to the habit it gave him no great discomfort. He remarked that he never should have thought of consulting me for that, as he could not remember ever breathing any other way.

Examination of the anterior nares showed: right side, marked hypertrophy of the inferior turbinated body, with almost complete stenosis. Left side, marked deviation of the septum, with some exostosis in the form of a sharp angle, which pressed against the inferior turbinated body, which was also considerably hypertrophied. The mucous membrane throughout a deep reddish hue, and bathed with a muco-purulent secretion which was abundant, especially in the left nostril. The exostosis and deviation of the septum to the left, leaving a space beneath, permitted more air to pass through the left nares. The hearing being nearly normal showed that the orifices of the Eustachian tubes were not encroached upon to any great extent. Examination of the posterior nares showed a mass of hypertrophied adenoid tissue of the naso-pharynx. I have never seen a more marked case of enlargement of the pharyngeal tonsil. The membrane of the pharynx presented a granular appearance, venous engorgement giving the parts a deep reddish color. There was some thickening and elongation of the uvula and also slight enlargement of the tonsils. All of these changes more marked upon the right side. Hoarseness was rarely present in this case. The pathological changes in the larynx were found to be slight. There was some venous congestion with very slight enlargement of the epiglottis. I have given the pathological changes somewhat at length to show how little discomfort is caused in some instances by conditions which in their ultimate effects are often serious.

I removed the hypertrophied membrane of the inferior turbinated bodies on both sides with the galvano-caustic snare, and afterwards a portion of the right inferior turbinated bone with the Bucklin saw. The exostosis of the septum on the left side was also removed with the nasal saw. Finding the left nasal space still too contracted I straightened the deviation of the septum by means of Steels, punch and forceps. The adenoid growth in the naso-pharynx was removed entirely in three operations with the pharyngeal cutting forceps. As a result of this treatment the general health began to improve rapidly. The cough ceased, the appetite returned. In six months the patient gained 20 lbs. in weight. Has had but one epileptic seizure, and that occurred during the first treatments. It is now three years since the last treatment and he is perfectly well, and has had no more epilepsy whatever. His chest expansion is 4 inches and his nasal breathing is perfect.

The second case came to my notice in December, 1888. The patient, a young man 17 years old, was well nourished, full blooded and rather large for his age. Had epilepsy since the age of 9 or 10. His general health had not suffered materially. This patient, like the first, had been under treatment for his epilepsy constantly, with no apparent benefit. Without going into the particulars of this case I will simply say, that there was absolute nasal stenosis with the consequent oral breathing. The nasal septum was quite straight. The right and left inferior turbinated bodies were hypertrophied, filling the cavities. There was some enlargement of the pharyngeal tonsil, but not enough to require surgical interference. The pharynx as a whole was very little implicated, and the larynx not at all. The epileptic seizures were frequent, occurring two or three times a week, and occasionally one or more a day. The hypertrophied membrane of the turbinated bodies was thoroughly removed with the cautery loop and knife. After the first operation the fits were less frequent. Am sorry to say this case passed out of my hands. His family moved away, and I have not since seen him. But at last accounts he had had no fits for eight weeks. He had never gone that length of time before without several attacks.

In the past few years much of the misery of this world has been laid to the organ of smell, and justly too, no doubt, in many cases. That epilepsy has other causes goes without saying, but the favorable result of the treatment in the first case, with the entire disappearance of the conditions named, and the unmistakable improvement in the second, is proof without any reasonable doubt that, in these cases at least, the condition found in the nares and naso-pharynx was accountable for it all. If in these two cases why not in others?

Since the completion of this paper I have ascertained through the brother of the patient referred to in case No. 2 that the young man had a very slight convulsion immediately after removing from town, about a week after the last operation, since which time there has been no recurrence. It is now about five months since the last convulsion.

EPIDEMIC INFLUENZA.

Read before the St. Louis Academy of Medicine.

BY WILLIAM PORTER, M.D.,

PROF. LARYNGOLOGY AND DISEASES OF THE CHEST IN THE COLLEGE OF PHYSICIANS AND SURGEONS, ST. LOUIS.

Mr. President and Fellows of the Academy: In compliance with your request to open the discussion upon this subject, I find myself somewhat at a disadvantage. The absence of reliable statistics regarding the prevalence and progress of this now wide-spread disease makes its exact study somewhat difficult. Doubtless many cases have been reported as of epidemic origin which were but ordinary catarrhal conditions, and certainly the number of cases in many localities has been greatly exaggerated.

After making due allowance for error there is little doubt but that a very large proportion of the population of cities visited by the epidemic become its victims. This fact alone justifies a close examination of the clinical history of this disease, but there is an additional incentive to such investigation from the knowledge we have that while epidemic influenza is not in itself a grave disease, yet its complications and the sequences are sometimes most important.

It is interesting to note that several forms of epidemic disease are now existing in the old world. Cholera is now reported to be ravaging Persia at Hamadan, advancing towards Teheran and Kurdistan, thus threatening Eastern Europe. Dengue; (father of the knees, as the Arabs say), well known in its epidemic form in this country, has been epidemic along the eastern coast of the Mediterranean since August. Dr. Glover, the attending physician to St. John's hospital in Beyrout, Syria, writes that at the latter place 75,000 of the 100,000 population have suffered from dengue during the last five months. Many of the symptoms which he finds in the epidemic are similar to those seen in the earlier stages of influenza. There is a chill, followed by fever, and severe pains in the knees and back, and headache and sometimes swelling about the throat. Catarrhal opthalmia is a frequent complication, though the marked catarrhal conditions of epidemic influenza are absent.

Is there more than a coincidence in the fact that influenza is epidemic in Russia and has rapidly advanced westward through Europe to America, while cholera is, as the *Lancet* states, threatening Europe through the familiar Caspian channels and epidemic dengue has extended from Alexandria to Constantinople?

There is something suggestive in the date of the outbreak of these three epidemics. As nearly as I can learn, the cholera in Persia only attained much headway late in the past summer, the epidemic of dengue in September, and the first cases of influenza were noted in St. Petersburg in October. While these diseases are clinically distinct, yet as far as we know have we not in the date of origin, the general prevalence and westward advance of each a reasonable premises for the hypothesis that there is a common climatic or atmospheric factor which influences their progress and direction?

The history of epidemic influenza has been repeatedly given during the last few months in the columns of both the medical and daily press, so that I need not detain you long in here reviewing it. Nearly all the accounts seem to be founded upon a book published in 1848 by Dr. T. B. Peacock, of the Royal Free Hospital, London, entitled "The Epidemic Catarrhal Fever of 1847 and 1848," or taken from a later article by the same author in Quain's Dictionary of Medicine.

Through the courtesy of Dr. A. S. Barnes I am able to present to you a book which antedates that of Dr. Peacock by more than half a century, in which our subject is treated with an exactness that would do credit to any observer of the present day.

"The First Lines of the Practice of Physic," by William Cullen, M.D., of Edinburg, was published 1792. I quote from his second volume, section 1061–1063:

"There are two species of catarrh. One of these, as I suppose, is produced by cold alone, as has been explained above; and the other seems manifestly to be produced by specific contagion. Of such contagious catarrhs, (these epidemical catarrhs have been lately termed influenzas), I have pointed out many instances occurring from the 14th century down to the present day. In all these instances the phenomena have been much the same, and the disease has always been particularly remarkable in this, that it has been the most widely and generally spreading epidemic known. It has seldom appeared in any one country of Europe without appearing successively in every other part of it; and in some instances it has been even transferred to America, and has spread over that continent, so far as we have had opportunities of being informed

"The catarrh from contagion appears with nearly the same symptoms as those mentioned (1047–1049). It seems often to come on in consequence of the application of cold. It comes on with more cold shivering than the catarrh arising from cold alone, and sooner shows febrile symptoms, and these likewise in a more considerable degree. Accordingly it more speedily runs its course, which is commonly finished in a few days. It sometimes terminates by a spontaneous sweat; and this in some persons produces a miliary eruption. It is, however, the febrile state of this disease especially that is finished in a few days; for the cough, and other catarrhal symptoms do frequently continue longer, and often, when they appear to be going off, they are renewed by any fresh application of cold.

Considering the number of persons who are affected with catarrh, of either the one species or the other, and escape from it quickly without any hurt, it may be allowed to be a disease very free from danger, but it is not always too be considered as such; for in some persons it is accompanied with pneumonic inflammation. In the phthisically disposed it often accelerates the coming on of phthisis; and in elderly persons it frequently proves fatal."

Is not this classical description by a master mind worthy of attention, especially when we remember how comparatively limited were the opportunities a century ago for such collective researches as are needed in the study of all epidemic diseases. From the 14th to the 18th century many epidemics of catarrhal fever are spoken of by the older writers, and we have the records of nine which occurred in the 18th, and four in the first half of the present century. The epidemic of 1782 extended all over every country of Europe, affecting more than one-half of the inhabitants and frequently proving fatal.

The present epidemic seems to have been more rapid in its progress from country to country than any of its predecessors. Some believe this due to the more rapid means of travel in these days.

This brings up the unsettled question of its etiology. Is the present disease contagious or is it due to miasmatic influence? The answer may not yet be positively given. The equal distribution of the disease has prevented the entire relegation of its cause to the idea of contagion, and the rapid spread and transitory effects of the causative agent suggests a miasm. It is true that Cullen believed that this form of influenza is disseminated by contagion, but as Tanner pointed out in discussing the epidemic of 1833, "the influenza pervaded a large tract of country in a manner much too sudden and simultaneous to be consistent with the notion that its prevalence depends exclusively upon any contagious properties that it may possess." He adds: "The occurrence of epidemic catarrh is unquestionably connected with some particular state or contamination of the atmosphere."

In harmony with the proposition let me refer to a statement in the third volume of the "Transactions of the College of Physicians." On May 2, 1782, Admiral Kempenfelt sailed from Spithead with a squadron, of which the Goliah was one. The crew of that vessel were attacked with influenza on May 29, and the rest were at different times affected; and so many of the men were rendered incapable of duty by this prevailing sickness that the whole squadron was obliged to return into port about the second week in June, not having had communication with any shore, but having cruised solely between Brest and the Lizard. This happened in one part of the fleet. In the beginning of the same month another large squadron sailed, all in perfect health, under Lord Howe's command, for the Dutch coast. Towards the end of the month, just at the time therefore, when the Goliah became full of the disease, it appeared in the Rippon, the Princess Amelia, and other ships of the last-mentioned fleet, although there had been no intercourse with the land. Similar events were noticed in the epidemic of 1833.

The curious will find much more of interest upon this subject in these "Transactions" in Cullen's "Nosology;" in the *London Medical and Physical Journal*, volumes IX and X; in the compilations of Dr. Hancock in the "Cyclopædia of of Practical Medicine," and in the further discussion by Tanner in his "Practice," volume II, page 39, *et seq.*

Let me here offer the proposition already hinted at, that the dissemination of all far-reaching epidemics does not depend alone upon contagion, and that there may be a causative factor common to all epldemics. Gairduer's observations, as quoted by Flint, "go to show that during the prevalence of influenza other diseases are unusally severe, and the rate of mortality from all diseases is increased." The reports from the large cities affected by the present epidemic seem to confirm the statement.

The symptoms of epidemic influenza are now quite well understood by every physician who is in any sense a student. A sudden attack, a chill, more or less complete, a succeeding fever, frequently severe pains, general prostration, more or less dryness of the throat and nares, often followed by free catarrhal secretions, with convalescence in from five to seven days, is perhaps an outline of the average case.

Many variations are seen, generally dependent, I believe, upon personal characteristics of the patient. In some instances the nervous symptoms predominate, and while the respiratory and digestive tracts seem unaffected, there are neuralgic pains most intense, resembling those of dengue. These, according to St. Petersburg authorities, are sometimes erroneously thought to be incipient typhoid fever cases.

A large proportion of the cases exhibit catarrhal changes of the naso-pharynx, larynx, and bronchial tubes. These are cases in which I believe there is the most danger of serious complications, such as capillary bronchitis in the young, and catarrhal, and even croupous, pneumonia in the aged. The inflamed mucous membrane of the respiratory tract, denuded of its epithelium, offers slight resistance to diphtheritic germs. I have recently seen a very severe attack of diphtheria suddenly develop in a child that had not fully recovered from influenza, and I think we shall see more of such cases in our city.

A number of authors speak of a variation of influenza in which the gastric symptoms are severe, where there is more or less jaundice and sometimes persistent vomiting. I have seen but one such case, and it was scarcely typical. Notwithstanding the severity of the symptoms in this class of cases, the record is that most of them do well.

In the ordinary case of epidemic influenza the prognosis is favorable, exceptions being those in which serious complications arise or disastrous sequela result. The average patient is well in a week. The danger from influenza is more in the complications than in the disease itself, and the increased death rate during the epidemic must necessarily put every careful physician upon his guard in the care of such cases.

The treatment of this disease depends largely upon the special symptoms as they arise. In brief, let me mention the use of acetanilide to quiet the patient and reduce the temperature, combined with quinine, in all cases where the fever is persistent. If the pains simulate those of rheumatism, one of the salicylates, preferably the salicylate of ammonia, in full and repeated doses. I have not hesitated to order sponging with tepid water where the skin has been hot and dry, and have, in several instances, used pilocarpine to meet the same indications; but such a remedy should be used very carefully where there is much depression. The administration of belladona in repeated one-drop doses of the tincture gives a most happy result in those cases where there is excessive secretion from the mucous membrane of the upper air passages, or atropia may be used instead of the belladona. This drug should not be pushed until its toxic effects are produced, but only as a stimulant to the vasomotor nerves.

Some cases, especially those in which there is gastric irritability or hepatic fault, administration of a mercurial is demanded in small doses once or twice repeated. All depressing agents should be avoided, simple nutritious diet should be used, and after the acute symptoms have passed, I have thought it best to substitute a good tonic for all other medication.

I am not aware that much dependence has been placed in any plan of prophylaxis, but if protection can be afforded it will probably be by the use of small doses of quinine and the avoidance of exposure and fatigue. I have not much faith in the use of sulphurous acid fumes or the inhalation of eucalyptol and similar agents.

I need scarcely add in closing that in this, as in all other diseases, we should not be over-zealous in our medication. Just enough of the proper agent—not too much—to meet the indications. The condition is in itself self-limiting; it is better judgment to care for the symptoms than to attempt to cut short the disease.

2830 Locust St., St. Louis.

CONTAGIOUS BALANO-POSTHITIS.—BATAILLE and BERDAL have reported to the Société de Biologie, of Paris, a contagious variety of balanoposthitis, which is characterized as follows:

1. Clinically by special erosions of crescentic shape with the convexity toward the meatus. These are limited by a delicate whitish border, which is extremely friable, somewhat elevated, and turned outward. The erosion extends eccentrically, its external border gaining little by little upon the healthy epithelium, while its internal border sloughs so that the more it extends the larger the ulceration becomes. In the circular manner of its spread this form of balano-posthitis is comparable with certain circinate parasitic affections of the skin.

2. Experimentally it is recognized by its contagious and inoculable properties. The authors have in fact succeeded in reproducing a series of the erosions which they describe by means of the inoculation of pus with the lancet. The authors propose to make a further communication, giving the results furnished by pus cultures and determining the character of the pathogenic agent.

The virulent contagious and specific character of the balano-posthitis furnish a sufficiently well-defined morbid entity, and one which should have a place among the venereal diseases, properly so-called.—*La Sem. Méd.*

DR. H. NEWELL MARTIN, of the Johns Hopkins University, has been elected President of the American Society of Naturalists.

TABLES, AND DIAGRAMS REPRESENTING THE SAME,

ACCOMPANYING A PAPER ENTITLED

THE CLIMATIC CAUSATION OF CONSUMPTION.

Read in the Section of State Medicine, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY HENRY B. BAKER, M.D.,
OF LANSING, MICH.

CROUP AND TEMPERATURE IN MASSACHUSETTS.

TABLE 1.—Exhibiting by months reduced to uniform length—30 days each—the number of *deaths* from *croup* in *Massachusetts* during 23 years, 1863-85, in comparison with the average *atmospheric temperature* for 48 years[1] (1790—1870) at Cambridge, Mass. Deaths computed from the 44th Registration Report of Massachusetts, 1886; and the temperature is taken from the Smithsonian tables, "Distribution and Variations of Atmospheric Temperature," 1876, p. 40.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Deaths.[2]	1,469	1,290	1,181	1,023	774	559	427	435	729	1,239	1,649[3]	1,631
Av. temperature.	25.25	26.28	34.39	44.40	56.01	66.74	71.86	69.82	61.89	50.18	39.28	29.34

[1] The series is stated as follows: "Begins Jan. 1790; ends Dec. 1870; extent, 48 years and 6 months." Some of the years between 1790 and 1870 were omitted. This series is used because it is the longest available, and, therefore, most likely to give the correct "normal" curve. That it does supply a correct "norm," and that, in table 2 and diagram No. 2, the normal curve representing absolute humidity is shown, is made evident by a comparison of the curve for temperature in diagram No. 1 with the curve for absolute humidity in diagram No. 2, noting how closely the two curves resemble each other, and considering how completely the absolute humidity of the atmosphere is controlled by the atmospheric temperature. The two curves are so nearly alike that it has been thought not necessary to make any more diagrams exhibiting the absolute humidity in Massachusetts, but to let the curve representing the temperature—the controlling condition—stand also as representing the absolute humidity.

[2] Total deaths from croup in the 23 years, distributed by months.

[3] To the author of this essay it seems probable that some proportion of the deaths recorded as from croup were from diphtheritic croup, and also that some part of the rise in the autumn, after the opening of the schools, may be due to the spreading of that communicable disease.

CROUP AND ABSOLUTE HUMIDITY IN MASSACHUSETTS.

TABLE 2.—Exhibiting by months reduced to uniform length—30 days each—the number of *deaths* from *croup* in Massachusetts during 23 years, 1863-85, in comparison with the *average absolute humidity* of the atmosphere at Boston during 17 years, 1870-86, computed from the tables on *relative* humidity and *temperature*, in the Report of the Chief Signal Officer, U. S. A., for 1886.[4]

	Jan.	Feb.	Mar.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.
Deaths[5]	1,469	1,290	1,181	1,023	774	559	427	435	729	1,239	1,649	1,631
Abs. Humidity. .	1.39	1.45	1.87	2.32	3.37	4.81	5.78	5.66	4.56	3.19	2.19	1.59

[4] That this supplies satisfactory data concerning the absolute humidity of the atmosphere in that vicinity is made probable by the steadiness of the curve, as may be seen in diagram No. 2, and especially by a comparison of that curve with the one representing the atmospheric temperature at Cambridge, Mass., in diagram No. 1.

[5] Total deaths from croup in the 23 years, distributed by months.

CONSUMPTION AND TEMPERATURE IN MASSACHUSETTS.

TABLE 3.—Exhibiting by months reduced to uniform length—30 days each—the number of *deaths* from *consumption* in Massachusetts during 23 years, 1863-85, in comparison with the *average atmospheric temperature* for 48[6] years (1790—1870) at Cambridge, Mass. (Deaths computed from the 44th Registration Report of Mass., 1886; and the temperature is taken from the Smithsonian tables, "Distribution and Variations of Atmospheric Temperature, 1876," p. 40.)

	Jan.	Feb.	Mar.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.
Deaths[7]	9,888	10,261	10,723	10,658	10,390	9,223	9,273	9,773	9,875	9,606	9,590	9,607
Av. Temperature.	25.25	26.28	34.39	44.40	56.01	66.74	71.86	69.82	61.89	50.18	39.28	29.34

[6] The series is stated as follows: "Begins Jan , 1790; ends Dec., 1870; extent, 48 years and 6 months." Some of the years between 1790 and 1870 were omitted. This series is used because it is the longest available, and, therefore, most likely to give the correct normal curve.

[7] Total deaths from consumption in the 23 years, distributed by months.

SMALL-POX AND TEMPERATURE IN MASSACHUSETTS.

TABLE 4 —Exhibiting by months reduced to uniform length—30 days each—the number of *deaths* from *small-pox* in Massachusetts during 23 years, 1863-85, in comparison with the average *atmospheric temperature* for 48 years[8] (1790-1870) at Cambridge, Mass. Deaths computed from the 44th Registration Report of Massachusetts, 1886; and the temperature is taken from the Smithsonian Tables, "Distribution and Variations of Atmospheric Temperature," 1876, p 40.

	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.
Deaths[9]	458	314	269	270	295	202	177	111	152	214	311	489
Av. Temperature.	25.25	26.28	34.39	44.40	56.01	66.74	71.86	69.82	61.89	50.18	39.28	29.34

[8] The series is stated as follows: "Begins Jan., 1790, ends Dec., 1870; extent, 48 years and 6 months." Some of the years between 1790 and 1870 were omitted. This series is used because it is the longest available, and therefore most likely to give the correct normal curve.

[9] Total deaths from small-pox in 23 years, distributed by months.

DIPHTHERIA AND TEMPERATURE IN MASSACHUSETTS.

TABLE 5.—Exhibiting by months reduced to uniform length—30 days each—the number of *deaths* from *diphtheria* in Massachusetts during 23 years, 1863-85, in comparison with the *average atmospheric temperature* for 48 years[10] (1790-1870), at Cambridge, Mass. (Deaths computed from the 44th Registration Report of Mass., 1886; and the temperature is taken from the Smithsonian Tables, "Distribution, and Variations of Atmospheric Temperature, 1876." p. 40.)

	Jan	Feb,	March	April	May	June.	July	August	Sept	October	Nov	Dec,
Deaths[11]	2,527	2,174	1 825	1,736	1 643	1 588	1,365	1,284	1,818	2,598	2,712	2,687
Av Temperature	25 25	26 28	34 39	44.40	56 01	66 74	71 86	69 82	61 89	50 18	39 28	29 34

[10] The series is stated as follows "Begins Jan , 1790 ends Dec , 1870 , extent, 48 years and 6 months " Some of the years between 1790 and 1870 were omitted This series is used because it is the longest available, and therefore most likely to give the correct normal curve

NOTE —The opening of Schools in the autumn may have to do with the increase culminating in November

[11] Total deaths from diphtheria, in 23 years, distributed by months

PNEUMONIA AND TEMPERATURE IN MASSACHUSETTS

TABLE 6 —Exhibiting by months reduced to uniform length—30 days each—the number of *deaths* from *pneumonia* in Massachusetts during 23 years, 1863 85, in comparison with the *average atmospheric temperature* for 48 years[12] (1790 1870), at Cambridge, Mass (Deaths computed from the 44th Registration Reports of Mass , 1886 , and the temperature is taken from the Smithsonian Tables, " Distribution, and Variations of Atmospheric Temperature, 1876," p 40)

	Jan	Feb	March	April	May	June	July	August	Sept	October	Nov	Dec
Deaths[13] .	6 048	6,791	7,042	6,508	4,967	2,776	1,828	1,514	1,913	2,767	4,125	5,221
Av Temperature	25 25	26 28	34 39	44 40	56 01	66 74	71 86	69 82	61 89	50 18	39 28	29 34

[12] The series is stated as follows "Begins Jan , 1790 , ends Dec , 1870 , extent, 48 years and 6 months " Some of the years between 1790 and 1870 are omitted This series is used because it is the longest available, and therefore most likely to give the correct normal curve

[13] Total deaths from pneumonia, in the 23 years, distributed by months

SCARLATINA AND TEMPERATURE IN MASSACHUSETTS

TABLE 7 —Exhibiting by months reduced to uniform length—30 days each—the number of *deaths* from *scarlatina* in Massachusetts during 23 years 1863 85, in comparison with the *average atmospheric temperature* for 48 years[14] (1790 1870), at Cambridge, Mass (Deaths computed from the 44th Registration Report of Mass , 1866 and the temperature is taken from the Smithsonian Tables, " Distribution, and Variations of Atmospheric Temperature, 1876," p 40)

	Jan	Feb	March	April	May	June	July	August	Sept	October	Nov	Dec
Deaths[15]	2 340	2 253	2 313	2,209	2 017	1 655	1,224	1,026	953	1,247	1,704	1,964
Av Temperature	25 25	26 28	34 39	44 40	56 01	66 74	71 86	69 82	61 89	50 18	39 28	29 34

[14] The series is stated as follows "Begins Jan , 1790, ends Dec , 1870 , extent 48 years and 6 months " Some of the years between 1790 and 1870 were omitted This series is used because it is the longest available, and therefore most likely to give the correct normal curve

[15] Total deaths from Scarlatina in 23 years distributed by months

TEMPERATURE AND SICKNESS FROM PNEUMONIA IN U S ARMIES

TABLE 8 —Exhibiting by months for a series of years the average atmospheric temperature at six stations representing approximately the latitude and longitude of the Aggregate forces of the Armies of the United States in the war of the Rebellion, in comparison with the average number of cases of *sickness* from *pneumonia* per 10 000 (" mean strength") of those forces, by months (of uniform length) during the four years, 1862 65

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Cases per 1 000 of Mean Strength	48 1	41 7	38 1	28 4	15 9	10 5	8 1	7 2	7 7	14 1	23 8	29 1
Average Atmospheric Temperature	36	38	45	54	66	74	78	76	69	56	46	38

SICKNESS FROM CONSUMPTION IN WHITE TROOPS, U S ARMY, AND TEMPERATURE

TABLE 9 —Exhibiting by months reduced to uniform length—30 days each—for the four years, 1862 65 the average number of *cases* of *consumption* per 10,000 soldiers ('mean strength ') of the white troops of the U S Army in the war of the Rebellion in comparison with the *average atmospheric temperature* at six stations representing approximately the latitude and longitude of the aggregate forces of the Armies of the United States

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Aver cases per 10 000 of Mean Strength	5 63	5 95	5 92	5 08	4 33	4 52	4 69	4 59	4 02	4 26	4 47	4 31
Average Temperature at Six Stations	31	38	45	54	66	74	78	76	69	56	46	38

DEATHS FROM CONSUMPTION IN WHITE TROOPS U S ARMY, AND TEMPERATURE

TABLE 23 —Exhibiting, by months reduced to uniform length—30 days each—for the four years, 1862 65, the average number of *deaths* from *consumption* per 100 000 soldiers ('mean strength) of the white troops of the U S Army in the war of the Rebellion in comparison with the *average atmospheric temperature* at six stations representing approximately the latitude and longitude of the aggregate forces of the Armies of the United States

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Av No of Deaths per 100 000 of M Str	19 55	22 47	24 23	19 63	17 00	16 07	17 38	15 75	14 96	17 62	17 13	18 06
Av Temperature at Six Stations	36	38	45	54	66	74	78	70	69	56	46	38

SICKNESS FROM DIPHTHERIA IN MICHIGAN AND TEMPERATURE

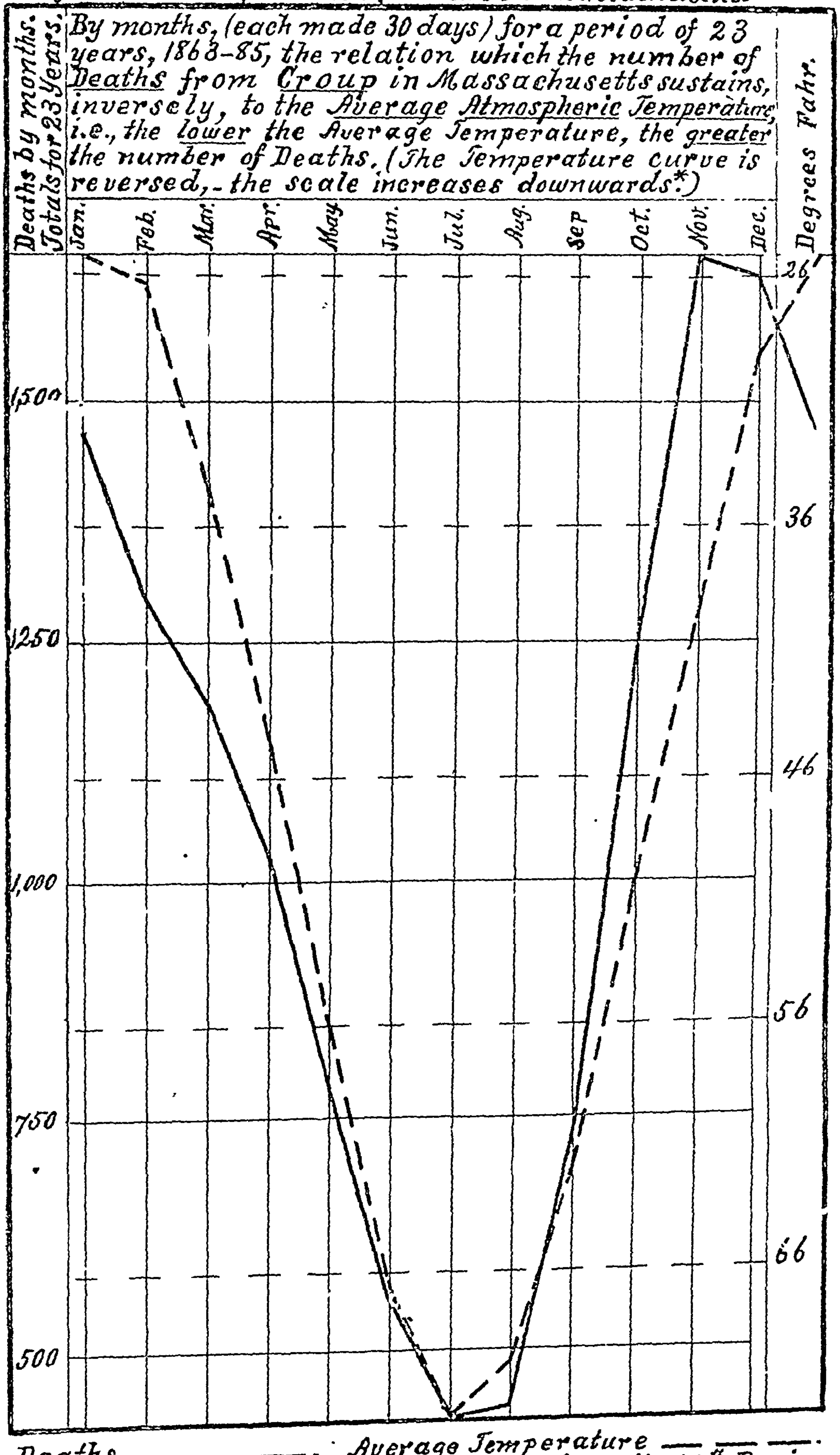
TABLE 24 —Exhibiting by months for a period of nine years, 1877 85 the relation of *sickness* in Michigan from *diphtheria* to the *average atmospheric temperature*

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Per cent of Weekly Reports .	29	25	22	21	18	16	15	16	19	27[16]	30[16]	29
Average Temperature	20 77	23 80	29 76	44 14	56 23	65 70	70 73	68 23	61 73	50 72	36 23	27 28

[16] It would seem possible that this sudden great increase of sickness from diphtheria may, in part, be due to the spreading of the disease incident to the opening of schools in the autumn

NOTE —Data for this table and the diagram illustrating it are found in Exhibit XIII, p 122 and in the upper line of Exhibit V, p 24, Annual Report of the Michigan State Board of Health, for 1886

Diagram 1.— Croup and Temperature in Massachusetts.

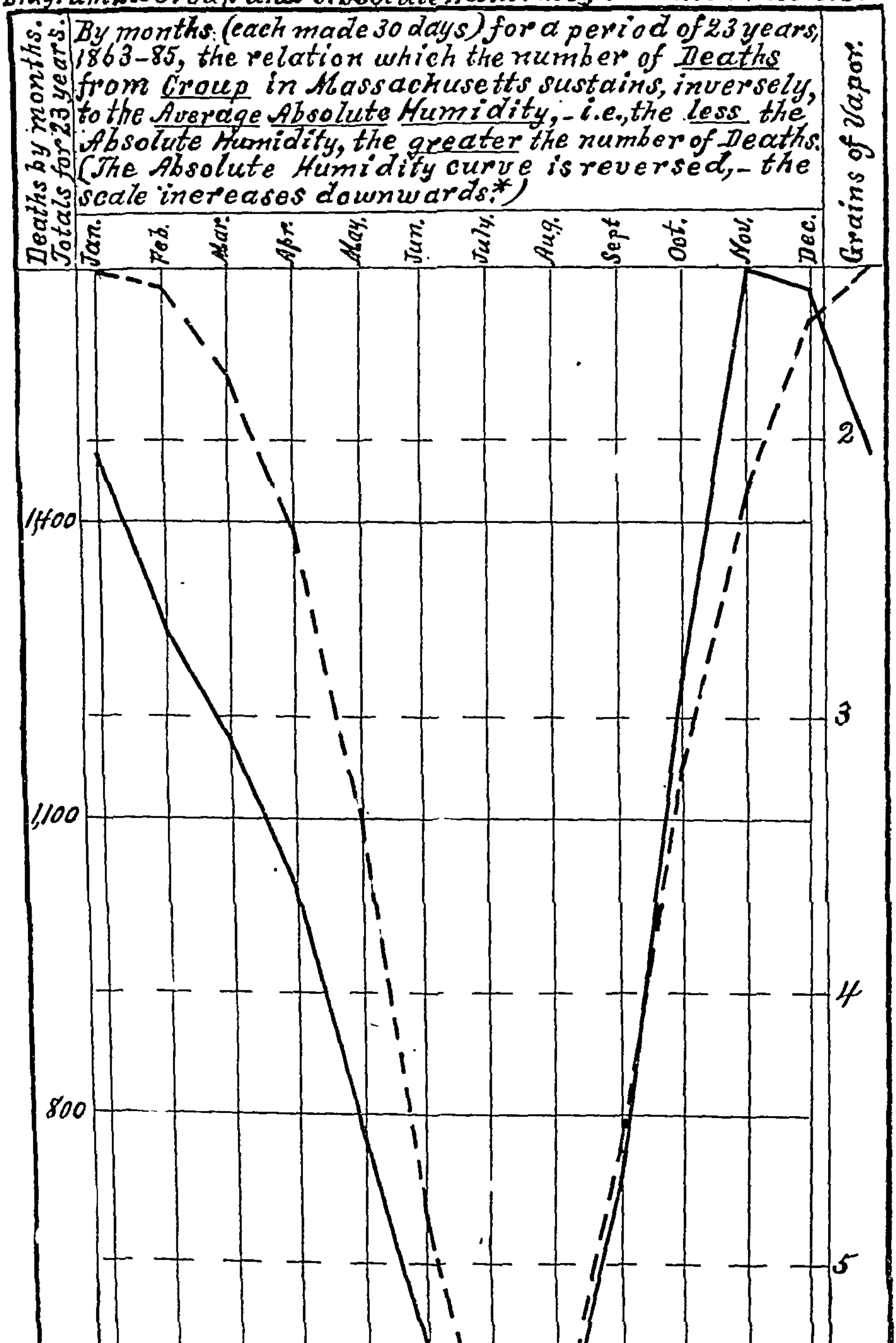


By months, (each made 30 days) for a period of 23 years, 1863-85, the relation which the number of Deaths from Croup in Massachusetts sustains, inversely, to the Average Atmospheric Temperature, i.e., the lower the Average Temperature, the greater the number of Deaths. (The Temperature curve is reversed,- the scale increases downwards.*)

Deaths ————. Average Temperature — — —.

* The numbers of deaths are compiled from the 44th Registration Report of Mass., 1886. The Average Temperature is compiled from a table on page 40 of the Smithsonian Tables "Distribution and Variations of the Atmospheric Temperature". It is for a period of 48 years, between 1790-1870 at Cambridge, Mass.

Diagram 2.--Croup and Absolute Humidity in Massachusetts.

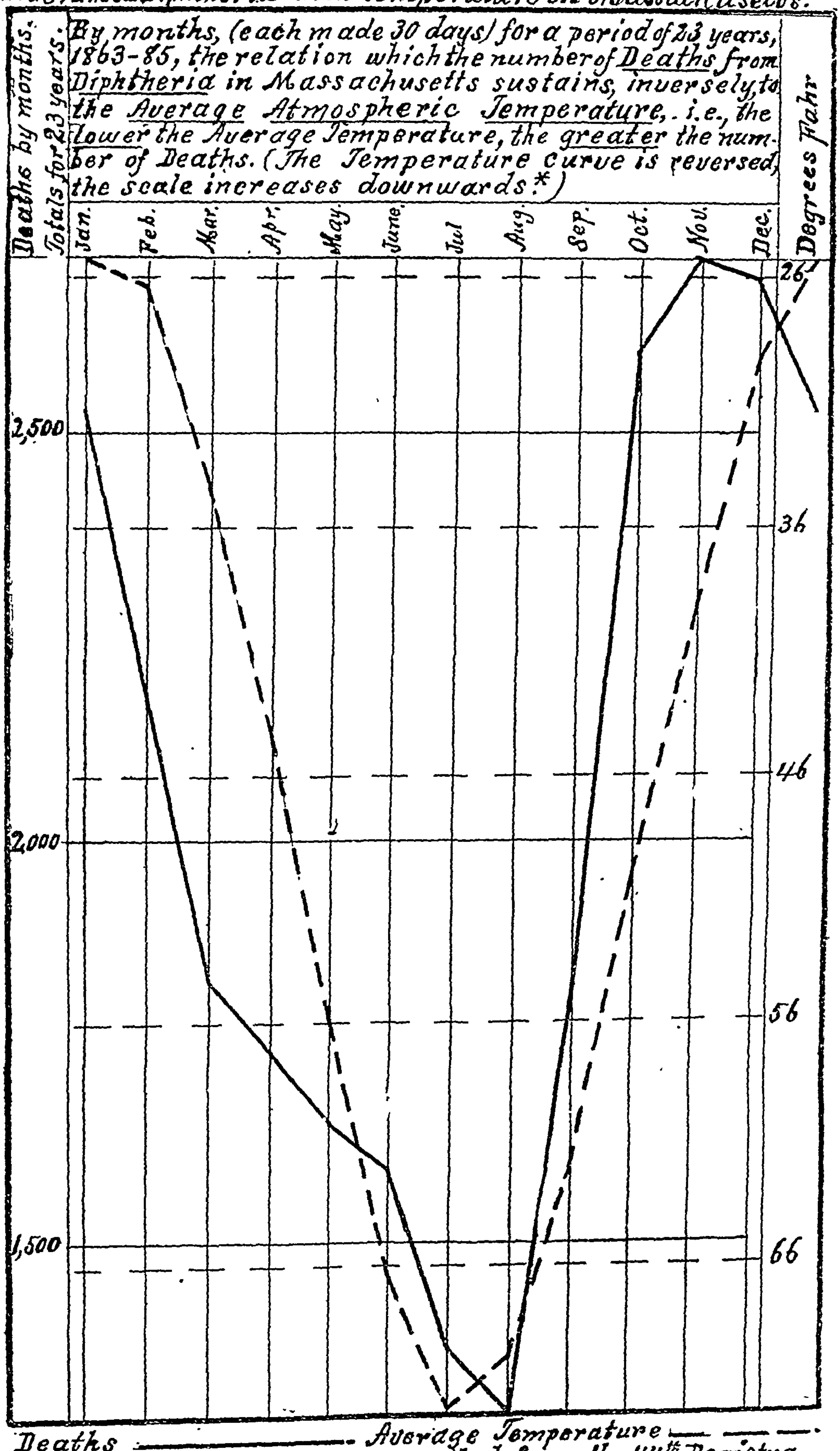


By months (each made 30 days) for a period of 23 years, 1863-85, the relation which the number of Deaths from Croup in Massachusetts sustains, inversely, to the Average Absolute Humidity, - i.e., the less the Absolute Humidity, the greater the number of Deaths. (The Absolute Humidity curve is reversed, - the scale increases downwards.*)

Deaths ———— . Average Absolute Humidity — — — .

*The numbers of deaths are compiled from the 44th Registration Report of Mass., 1886. The Average Absolute Humidity is compiled from the Relative Humidity and Temperature in the Report of the Chief U.S. Signal Officer for 1886. The curve represents the normal, at Boston, for 17 years, 1870-86.

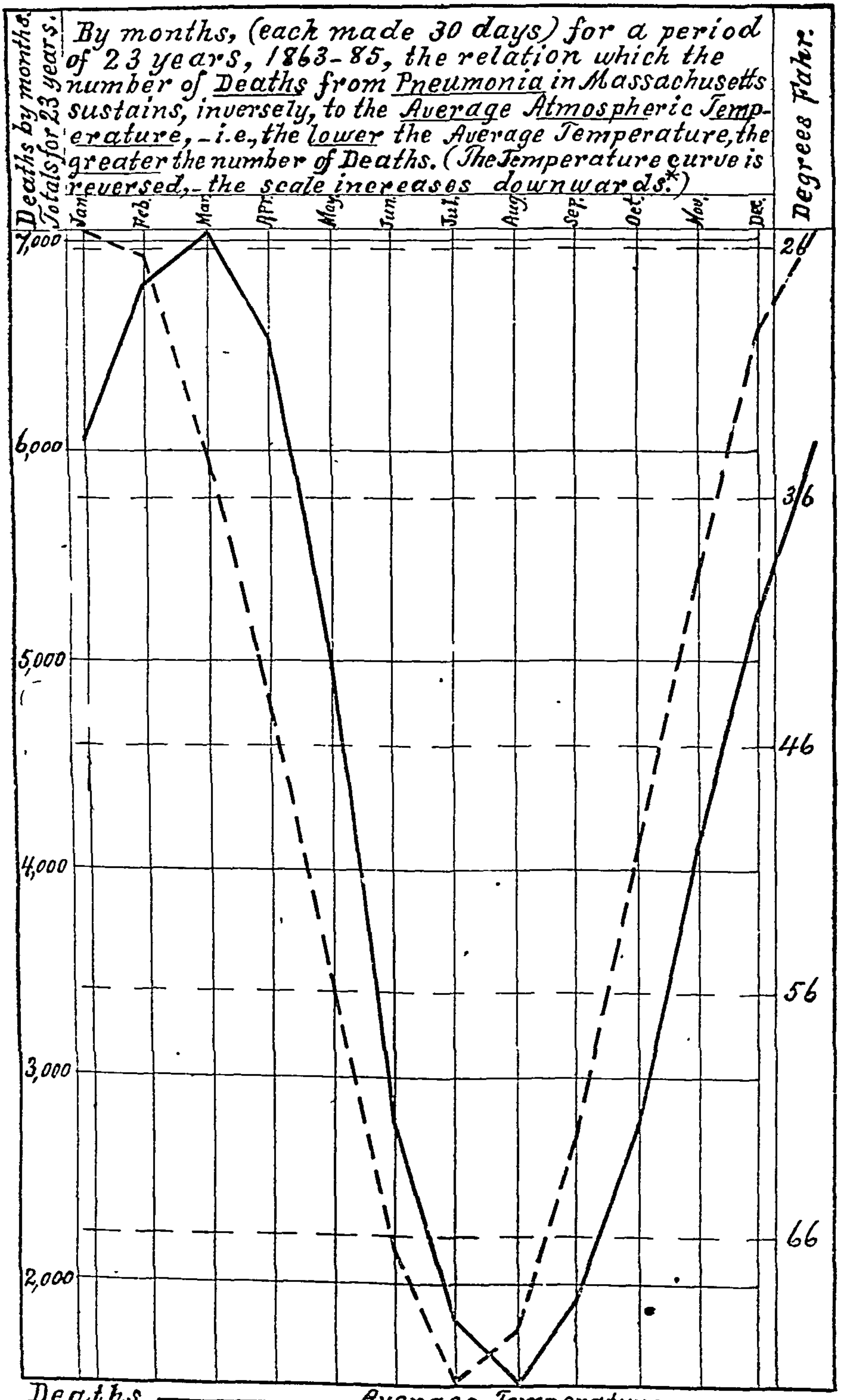
Diagram 5. Diphtheria and Temperature in Massachusetts.



By months, (each made 30 days) for a period of 23 years, 1863-85, the relation which the number of Deaths from Diphtheria in Massachusetts sustains, inversely, to the Average Atmospheric Temperature, i.e., the lower the Average Temperature, the greater the number of Deaths. (The Temperature curve is reversed, the scale increases downwards.*)

*The numbers of deaths are compiled from the 44th Registration Report of Mass., 1886. The Average Temperature is compiled from a table on page 40 of the Smithsonian Tables "Distribution and Variations of the Atmospheric Temperature." It is for a period of 48 years, between 1790-1870 at Cambridge, Mass.

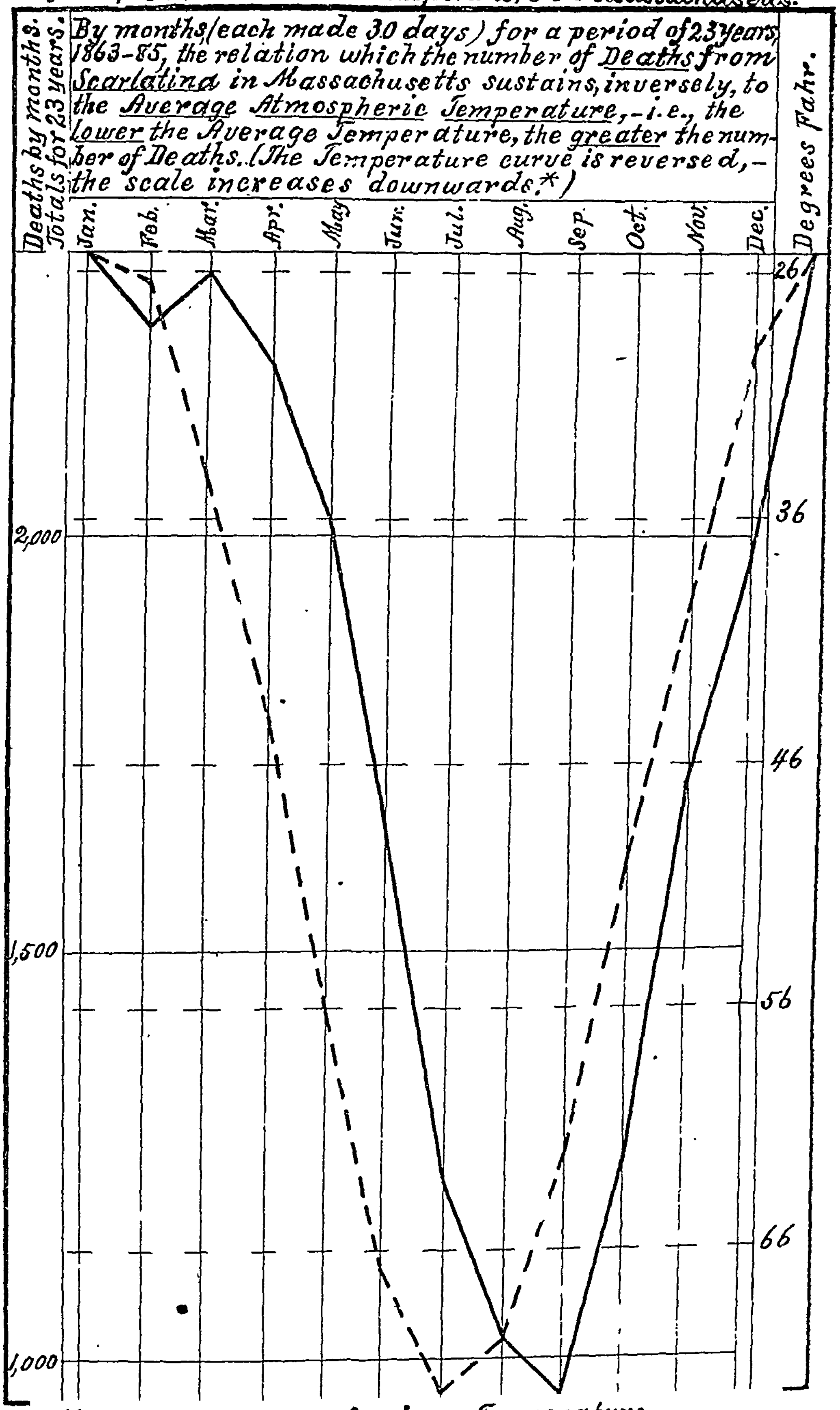
Diagram 6.-Pneumonia and Temperature in Massachusetts.



By months, (each made 30 days) for a period of 23 years, 1863-85, the relation which the number of Deaths from Pneumonia in Massachusetts sustains, inversely, to the Average Atmospheric Temperature,-i.e., the lower the Average Temperature, the greater the number of Deaths. (The Temperature curve is reversed,-the scale increases downwards.*)

*The numbers of deaths are compiled from the 44th Registration Report of Mass., 1886. The Average Temperature is compiled from a table on page 40 of the Smithsonian Tables "Distribution and Variations of the Atmospheric Temperature." It is for a period of 48 years between 1790-1870, at Cambridge, Mass.

Diagram 7.–Scarlatina and Temperature in Massachusetts.

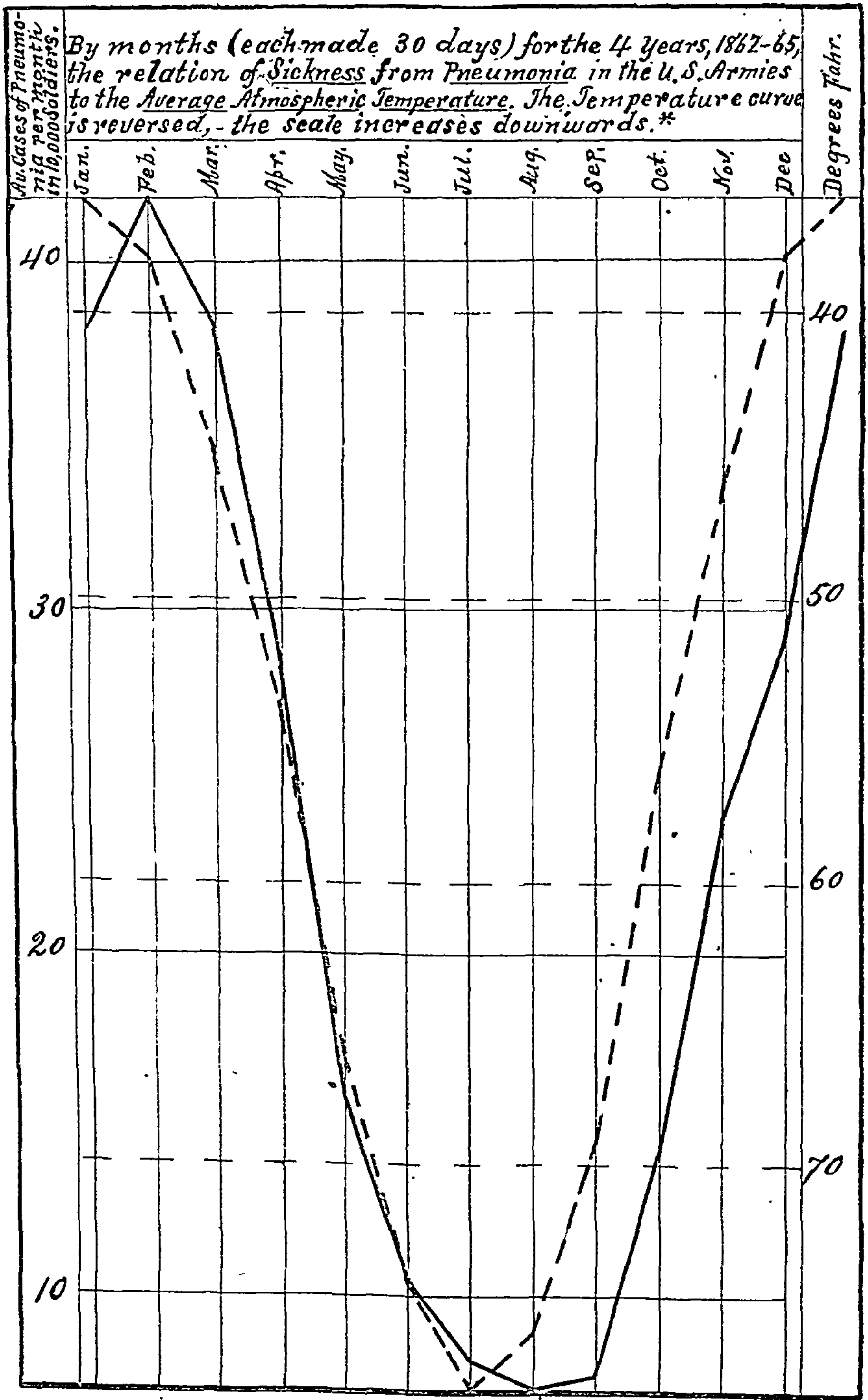


By months (each made 30 days) for a period of 23 years, 1863-85, the relation which the number of Deaths from Scarlatina in Massachusetts sustains, inversely, to the Average Atmospheric Temperature,—i.e., the lower the Average Temperature, the greater the number of Deaths. (The Temperature curve is reversed,—the scale increases downwards.*)

Deaths ——————. Average Temperature — — —

*The numbers of deaths are compiled from the 44th Registration Report of Mass., 1886. The Average Temperature is compiled from a table on page 40 of the Smithsonian Tables "Distribution and Variations of the Atmospheric Temperature." It is for a period of 48 years between 1790-1870, at Cambridge, Mass.

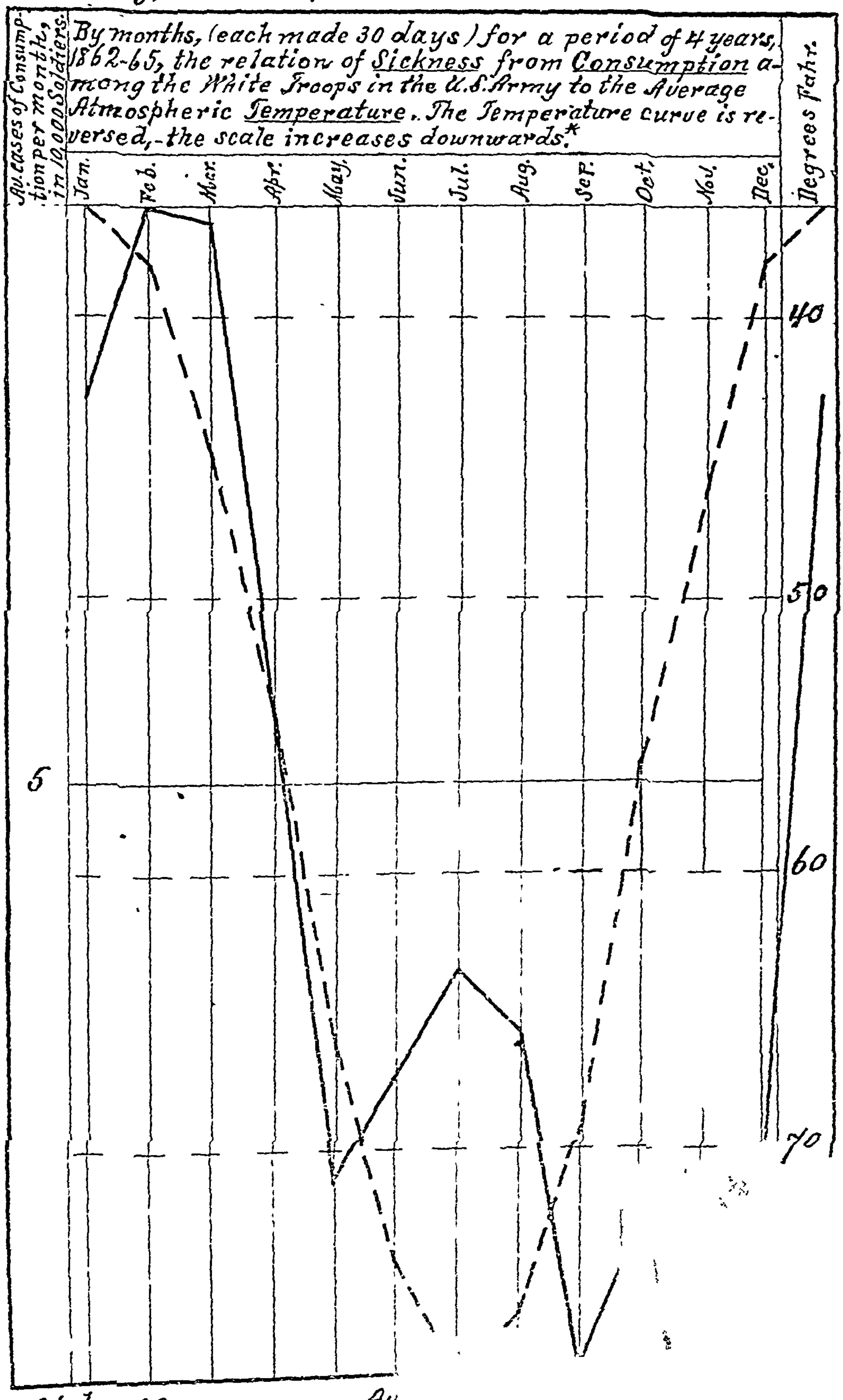
Diagram 8.- Temperature, and Sickness from Pneumonia in U.S. Armies.



Pneumonia ————. Average Temperature – – –

*The temperature curve is made from the normals at six stations representing approximately the localities occupied by the armies of the United States, during the war of the rebellion.

Diagram 9.–Sickness from Consumption in White Troops, U.S. Army, and Temperature



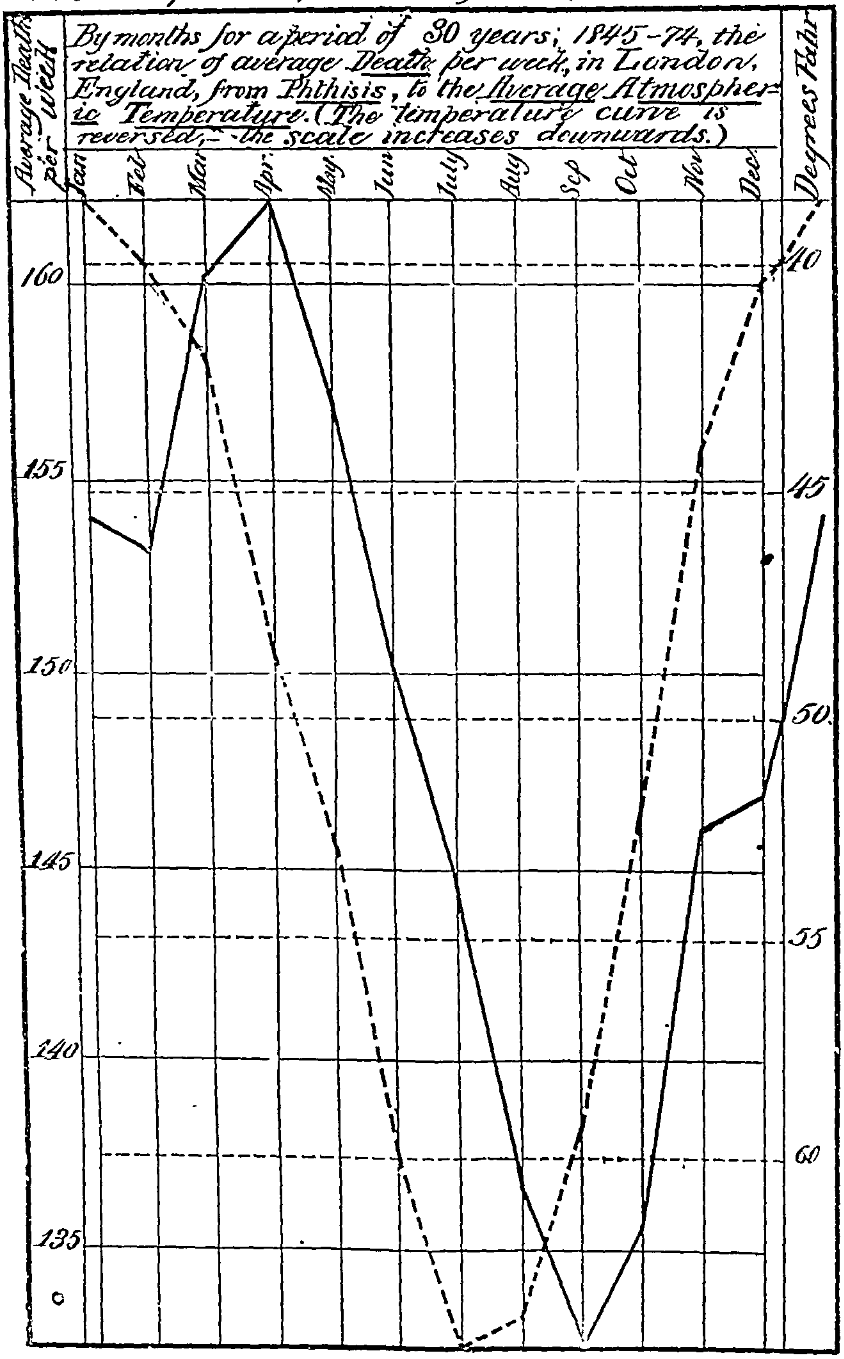
Sickness ———— . Av

* The temperature curve is m

representing approximately

Armies of the United States.

No 10_Temperature, and Deaths from Phthisis in London.

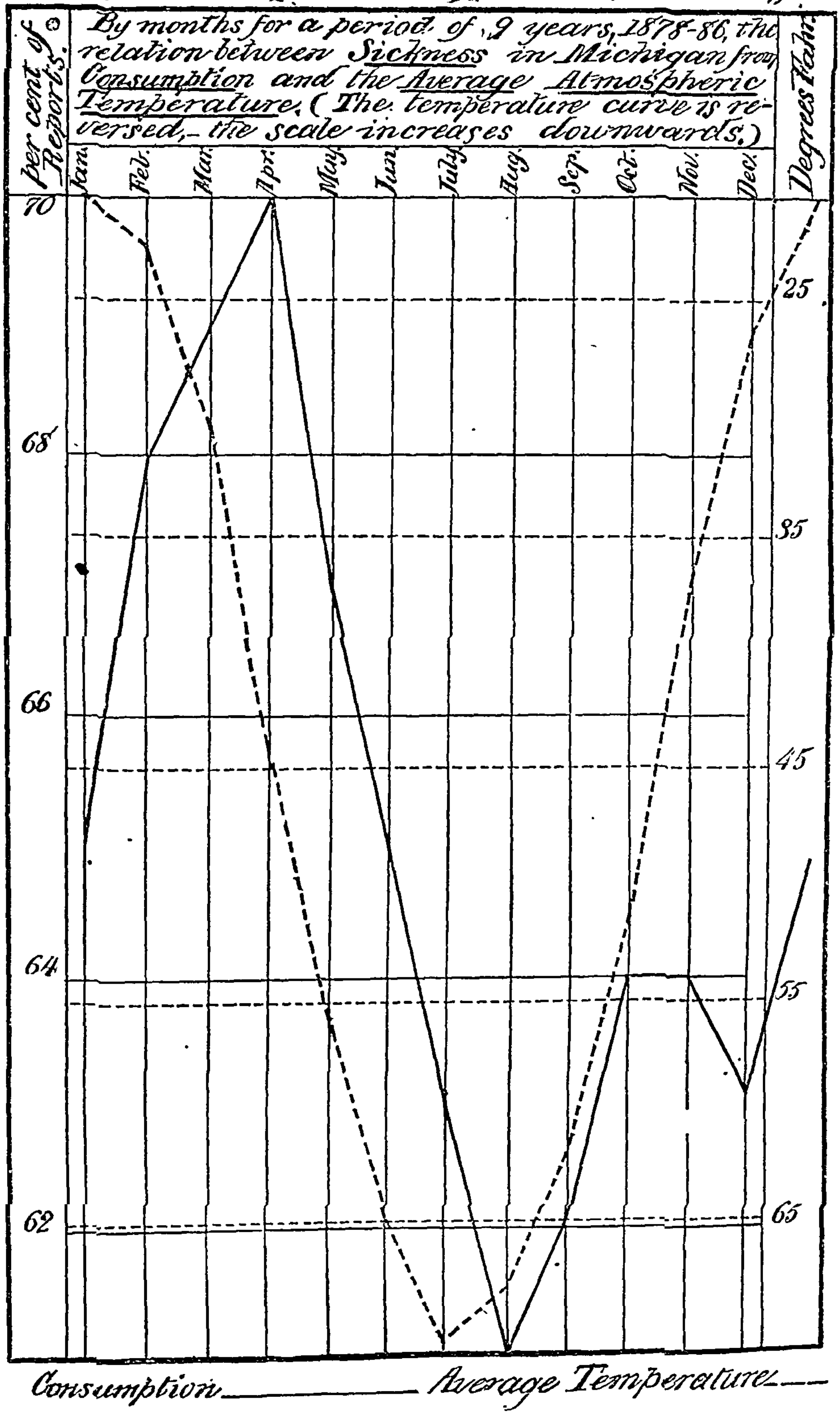


By months for a period of 30 years; 1845-74, the relation of average Death per week, in London, England, from Phthisis, to the Average Atmospheric Temperature. (The temperature curve is reversed,– the scale increases downwards.)

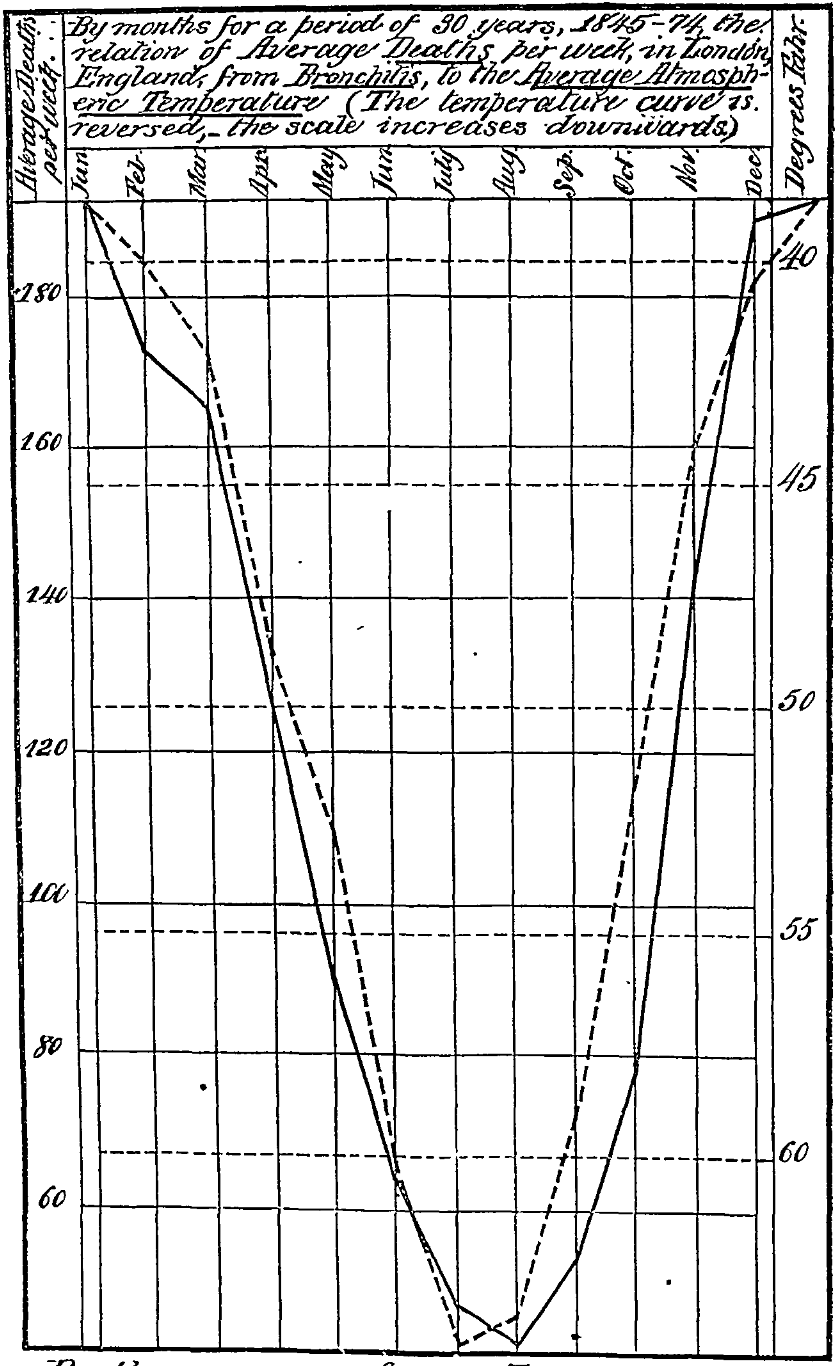
Deaths ______. Average Temperature ----------

About 291 000 deaths from Phthisis are represented in this diagram data for which are from Jour. of Scottish Met. Soc., New Series Nos XLIII, XLIV, XLV, XLVI, pages 252 and 263.

No 11 Temperature and Sickness from Consumption in Michigan.



No 12.—Temperature and Deaths from Bronchitis in London.



Deaths ———— Average Temperature - - - - -

About 176,000 deaths from Bronchitis are represented in this diagram data for which are from Jour of Scottish Med. Soc. New Series Nos. XLIII., XLIV, XLV, XLVI. pages 253 and 263

MEDICAL PROGRESS.

RAPID CURE OF BUBOES BY THE INJECTION OF IODOFORM VASELINE.—PROF. POUTAN claims to obtain excellent results in the treatment of buboes by the injection of vaseline impregnated with iodoform, which makes a kind of permanent iodoform dressing in the interior of the ganglion. His operation is as follows:

1. Antiseptic cleansing of the parts with Van Swieten's solution.
2. Puncture with a lancet if the skin is thin; with a bistoury if the pus is deep seated.
3. Evacuation of the pus, with complete expression of the liquid contents.
4. Injection of liquefied vaseline containing iodoform.
5. Dressings of bichloride cotton.

The puncture need not be made in a dependent position, as there is no subsequent flow. It should be central, so that the pus may be forced into it from all sides.

The evacuation of the pus should be complete and gradually made, although it is sometimes quite painful. The pain may be relieved by the injection of a few centigrams of cocaine around he bubo. After the expression of the pus a few yringefuls of Van Swieten's solution should be injected, to wash the walls of the pocket. The iodoform vaseline is then gently injected from a glass syringe previously charged and kept warm in water. The cavity of the bubo should be filled, but not distended. Immediately after the injection, and before the fluid has an opportunity to return, a cold dressing of cotton moistened in Van Swieten's solution is applied and kept in place by a spica bandage. This process renders occlusion nearly complete, because the cold application causes the vaseline to congeal in the lips of the wound, where it forms a plug. The dressing also aids in the occlusion.

After the first day all pain disappears and improvement takes place so rapidly that cure without cicatrization takes place, upon an average, in six or seven days. In some cases it is necessary to renew the vaseline. In three months forty-one buboes were treated by this method. In more than half of this number there was a cure, on an average, in less than five days; the longest time required was twenty-three days.—*Le Scalpel.*

ANTIPYRIN IN OBSTETRICS AND GYNECOLOGY.—Antipyrin, in MISRACHI'S experience, is a valuable means of combating the colic of menstruation, but it is necessary to pay attention to its indications. It is inefficacious when painful menstruation is dependent upon grave affections of the uterine appendages, and it may be contraindicated when dysmenorrhœa is complicated with scanty menstruation. Not more than 2 grm. should be given and this in two doses; in dyspeptic patients it should be given by enema.

Latterly the attempt has been made to alleviate the pains of parturition by the administration of antipyrin, and authors have reached very contradictory conclusions regarding its applicability. In twenty-one cases where the reporter has thus employed antipyrin in large doses by the mouth, by the rectum or by hypodermic injection, he has obtained notable relief in only six instances. Antipyrin, then, is not an obstetrical anæsthetic. Its useful action is only obtained in certain painful complications of labor such as uterine contractions accompanied by exaggerated pain, as is observed in posterior positions of the vertex, premature rupture of the membranes, spasmodic contraction of the cervix, etc.

If the action of antipyrin is inconsiderable in the pains of labor, it has, on the other hand, a very marked effect upon the after pains. Whatever may be the cause of these pains, antipyrin has succeeded in more than eighty cases in one hundred, and its action is absolutely constant when the pains are provoked and kept up by the administration of ergot. The reporter makes only one exception to this rule; and that is in cases where there is a retention of a portion of the secundines or a clot. In such cases the first thing to do is to empty the uterus and give hot irrigation, after which the antipyrin may be given with excellent results in relieving after pains.—*Jour. de Méd. de Paris.*

HOW TO INCREASE THE SOLUBILITY OF QUININE.—FRIULZI has observed that the salts of quinia are much more soluble in the presence of antipyrin; thus, 1 gram of the hydrochlorate of quinia with 0.4 to 0.5 gram of antipyrin dissolves in 2 grams of water at a temperature of 20° to 25° R.; with 0.20 to 0.25 gram of antipyrin a solution is obtained in 2 grams of water at a temperature of 35° to 40° R.; without the antipyrin, on the contrary, a temperature of 42° to 45° R. is necessary, while, upon cooling, a large portion of the quinia is deposited in crystalline form. Since solutions prepared with antipyrin are stable, they may be advantageously employed for subcutaneous injection.—*St. Petersburger Med. Woch.*

TUBERCULOSIS CONVEYED BY EARRINGS.—A case is reported from Unna's policlinic for skin diseases, in which a girl 14 years of age, of a healthy family, became infected with tuberculosis by wearing earrings which had previously been worn by a woman who died of pulmonary consumption. Flat ulcers with undermined borders appeared in the lobes of the ears, especially the left ear. There was also swelling of the left cervical glands and dulness over the apex of the left lung. Tubercles were found in the granulations of the ulcers and in the sputum. Acute phthisis supervened.—*Wiener Med. Bl.*

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SATURDAY, JANUARY 25, 1890.

HOW SHALL PHYSICIANS BE EDUCATED?

It is but a few weeks since a society held its meeting in Chicago, having for one of its principal objects the advancement of the standard of preliminary education in the medical profession. The President, in his opening address, lamented the small number of liberally educated men among the students and graduates of our medical schools, and urged the importance of a collegiate education on those who would adequately prepare themselves for the responsibilities of our calling. On the other hand, in a series of articles on the choice of a profession, lately published in *Harper's Young People*, Professor Austin Flint took the ground that it was not advisable for most of those intending to practice medicine to take a college course, although he considered a certain amount of classical study very desirable. He recommended, in substance, that the intending physician should master the studies required for admission to our better colleges, and then, at about eighteen years of age, enter on his professional studies. The opinion of a man of such eminence as an investigator and such experience as an educator is worthy of respectful consideration, and it may be well to consider whether the advantages to the physician of a classical education are such as to justify the outlay of time and money which it involves, and, if so, to what extent it should be carried.

It cannot be denied that a great part of the knowledge laboriously acquired during a college course is soon forgotten, and that most of it has little direct application to medical practice. Nevertheless, the fact remains that no adequate substitute for classical study as a means of mental discipline has yet been discovered. The records of the German universities show that, even as scientific students, those who come from the gymnasium, where Latin and Greek occupy a prominent place in the curriculum, take a higher standing than graduates of the realschulen, in which attention is principally paid to the natural sciences and modern languages. The importance of a thorough training in methods of study is especially great to men who are to acquire their professional training under the lack of order and system which, unfortunately, characterizes the instruction in most, even of our more prominent, medical colleges. But this is not the only advantage, perhaps, to most men, not even the greatest benefit of a collegiate course. The study of the masterpieces of the greatest minds, and the daily association with men of intellectual tastes, have a tendency, which few who are exposed to these influences wholly escape, to broaden the student's view of life and to make him not only a successful business man, but a good citizen. It would be foolish to claim that a thorough education in the true meaning of the word—bringing out what is in a man, rather than pouring knowledge into him—cannot be otherwise obtained; but it is true of the medical profession, as of other callings, that the proportion of liberally educated men is highest in the foremost ranks of the profession.

But, notwithstanding all this, it is true that art is long and constantly growing larger, and life is short. The requirements for admission to our best colleges have risen greatly within the last thirty years, and the expenses of tuition and of living have grown proportionately. A man can hardly be fitted to enter a first-class college under 18 years of age, and when he graduates, at 22, he is likely, unless backed by a pretty long purse, to be encumbered with debts which will furnish occupation for his time and energies for two or three years. If, then, he takes a three years' course of professional study, and a year in a hospital, he will be 28 years old when he opens his office. In the meantime his schoolmate, who began his medical studies when he entered college, will very likely be comfortably settled in practice, with a family growing up around him. The age at which it is desirable to begin the practice of medicine is perhaps open to discussion. Even granting the practicability of acquiring a thorough professional equipment at the minimum age prescribed by our medical schools, there are probably few who have at that age the maturity of judgment needed in a profession in which wisdom is quite as important as knowledge. On the other hand, too late an entrance on practice may imply not only loss of valuable time, but of readiness of adaptation to the change from the class-room and laboratory to the bedside. It may perhaps be laid down as a general rule, admitting of numerous exceptions, that 24 or 25 years is the most favorable age for entering on independent practice, although hospital and dispensary work, under competent direction, may be profitably undertaken somewhat earlier. The question, then, seems to be, not how much it is desirable for the physician to know before he begins practice, but how he can obtain the most useful training and instruction within reasonable limits as to time and expense.

It would not seem difficult to so modify the college curriculum as to enable the student to acquire knowledge that would be directly useful in his profession, without material sacrifice of the general culture which it is the object of a liberal education to impart. The natural sciences have a value of their own as a mental discipline, which is practically admitted by their introduction, to a greater or less extent, into the course of study of all our literary colleges. In most of them there is more or less choice allowed the student during the last two years of his course, and some, at least, provide a certain amount of instruction in anatomy and physiology. There is no reason why these studies, properly pursued, may not be of as much value as a means of discipline and culture as physics and astronomy, and need be no difficulty where, as is often the case, a medical school is associated with the college, in making such a substitution. The student, then, having devoted the first two years of his college course to languages and mathematics, might take up, in the last two years, anatomy, human and comparative, chemistry, physiology, histology, and even, perhaps, a certain amount of general pathology, including bacteriology, and still be able to study logic, rhetoric, psychology and philosophy with the remainder of his class. Graduating from college at 22 or 23, with this amount of instruction in the fundamental of medical science, he could easily graduate in medicine in two years more and be prepared to compete, on more than equal terms, with those who had taken the short cut.

The matter of strictly professional education does not need, at present, discussion so much as agitation. That students should listen to lectures on practice of medicine, surgery, obstetrics and therapeutics, while ignorant of the rudiments of anatomy, physiology and chemistry, and that after two brief terms of what can only be considered a parody on instruction, they should be intrusted with the most sacred interests of their fellow men, is an absurdity, to use no stronger term, which needs only to be stated to be condemned, and which would not be tolerated if students and instructors were not willing to subordinate the dignity of their profession and the welfare of their patients to pecuniary profit. The result is that the profession is crowded with half-educated men, while the well-informed and competent suffer in purse from their competition, and in reputation from their ignorance.

Although we have endeavored above to outline the sort of preliminary education that seems to us most desirable for the student of medicine, it would not, probably, be desirable, even if there were any chance of its being brought about, that our medical schools should at once raise their requirements to such a standard. It is not, however, too much to ask that they should require the ability to use the English language with reasonable correctness, and a fair degree of general intelligence, with some sort of mental training, in applicants for admission. Unfortunately it is notorious that this standard is far in advance of the practical requirements of many prosperous schools. A systematic, graded course of instruction extending through at least three years, with practical work in the laboratory and at the bedside, is little enough, in the present state of medical science, to prepare the student for the demands that will be made on his knowledge and skill when the issues of life and death are in his hands. The examinations should be such as to thoroughly test the knowledge and capacity of the applicant for a degree, and should be conducted by persons to whom the quality, not the size of the graduating class, is the important matter. When such a course as this is adopted, we shall see a notable advance both in the usefulness and the repute of our profession. So long as a medical degree is no guaranty either of general intelligence or professional skill, the whole profession must suffer, not unjustly, for the fault of its unworthy members, and honorable and able men will be classed, in the public estimation, with ignorant pretenders within and without its ranks.

UNIFORM STATE LEGISLATION.

The founding of a nation was not only beset with many perils, but the provision for its varied wants required such labor as only a heroic people could accomplish.

In the development of a commonwealth of such magnitude in such a brief period of time, those needs which only the medical profession could supply have been so great, and the demands to be met so immediate, that we may justly congratulate ourselves upon the success already achieved. Only those familiar with the obstacles to be overcome can appreciate the progress already made.

It is obvious that the time is fully at hand when legislation is needed to remedy that which seems to be otherwise without control, and to perfect the work so well begun. If we are to secure a uniform and reasonable standard of requirements for graduation in medicine, the power to confer degrees must be divorced from those organizations which impart instruction. The legislation which can alone accomplish this is vested in the several States. More than any other organizations, the various State Medical Societies can favorably influence such legislation.

The need of a standard of requirement which shall be uniform in all the States can hardly be over-estimated. The necessity, then, of wise and concerted action on the part of all State Societies becomes obvious, and we hardly conceive of any other means of initiating this great work, so feasible or so promising of good results, as that of securing a national conference of the officers of the State Societies for the discussion of the questions which are involved. May we venture to suggest the expediency of such a conference in connection with the next annual meeting of the American Medical Association at Nashville.

THE JOURNAL will be happy to serve as the medium of communication, if this subject shall favorably commend itself to the officers of the various State Medical Societies. In our next number we purpose to present the present status of medical legislation in the various States.

EDITORIAL NOTES.

HOME.

THE NEW YORK PATHOLOGICAL SOCIETY.—The following officers were elected at the annual meeting of this Society held January 8, 1890: President—Dr. J. West Roosevelt; Vice-President—Dr. H. P. Loomis; Treasurer—Dr. J. H. Hinton; Secretary—Dr. T. L. Stedman; Editor of the Transactions—Dr. G. C. Freeborn; Committee on Admission and Ethics—Drs. W. P. Northrup, H. P. Loomis, R. H. Sayre, J. S. Ely and R. G. Freeman; Committee on Publication—Drs. T. M. Prudden and W. B. James.

DEATHS FOLLOWING THE USE OF A SOOTHING SYRUP.—Dr. A. G. Belleau has called the attention of the Quebec Board of Health to six fatal cases among children following the use of a so-called soothing syrup, which upon examination showed the presence of opium in large proportion. It is supposed that a mistake was made in the compounding of the syrup and four or five times the amount of opium required by the formula was introduced by the mixer. In the case of five of the children the medicine produced convulsions in which they died; so that their deaths were certified as due to that disorder. But when the sixth child fell ill and had a coma, and not convulsion, this irregularity led to the discovery that this intensely soothing syrup had been used, and an inquest by the coroner was ordered. The ordinary soothing syrups of the shops contain more or less opium or morphia and are essentially so dangerous that their sale should be forbidden by law, except under the same conditions as the other preparations of known strength which must be sold and labeled as poisons, if indeed their sale cannot be interdicted altogether.

SIXTY YEARS IN PRACTICE.—Dr. Isaac Coffman, of Phoenixville, Pa., is said to be the oldest living graduate of the University of Pennsylvania. He was graduated in 1827 and has been in almost uninterrupted practice ever since, over sixty years. He does not look like a man who is more than 60 years old. His eighty-fifth birthday occurred on New Year's day.

ONTARIO MEDICAL ASSOCIATION.—Dr. William Goodell, of Philadelphia, has been invited to deliver an address before the Ontario Medical Association, at the next annual meeting in June. Toronto has been selected as the place of meeting, and the members of the profession in that city are already organized and at work to make the coming convention both useful and attractive.

TYPHUS FEVER IMPORTED.—The importation of typhus fever from Germany is sufficiently rare to be noteworthy. The New York Board of Health have had seven cases of this disease under observation at the North Brother's Island Hospital, of whom all except one are known to have come over on the steamer Westernland. There are doubtless other cases scattered throughout the country, immigrants on that same vessel over which some physicians having seldom to cope with ship-fever have been puzzling to find out why such grave febrile symptoms should attend the prevailing epidemic, and perhaps have seen a strange contagious quality about it. Keep a lookout for all Westernland immigrants.

THE CREMATORY AT TROY, N. Y.—The twelfth crematory in this country has just been finished at Oakwood Cemetery, Troy, N. Y. Two bodies have already been incinerated there. This is the most elaborate structure of its kind in the world, comprising, as it does, a memorial chapel with a lofty tower. It is known as the Earl Memorial Building, given to the cemetery in memory of Mr. Gardner Earl by members of his family. The chapel may be freely used by all who have the privileges of the cemetery. There are now forty crematories in Europe and America. Of these Italy has more than half, while France, Germany, Denmark and Sweden are content with one for each country.

FOREIGN.

CULPABLE EXPERIMENTATION WITH HYPNOTISM.—In one of the law courts of Helsingborg, Sweden, a clear case of hypnotism has puzzled the judges. A young medical student brought suit against a practicing physician in the town for having hypnotized him several times against his will, with the result that his nervous system was injured and his mind was somewhat enfeebled. Several witnesses appeared for the plaintiff, and, to the astonishment of the court, they all appeared to be crazy, and gave the most contradictory and astounding testimony. Hereupon a medical gentleman came upon the stand and further astonished the court by the announcement that his confrère, the defendant, had hypnotized the witnesses and made them say just whatever he liked. Finally the court adjourned the case and appointed a commission to see if the entire crowd were not crazy.

THE death of Prof. von Troeltsch, of Wurtzburg, has been announced by cable as having taken place Saturday, January 11. He was a veteran otologist and a well known writer on diseases of the ear.

FOREIGN UNIVERSITY INTELLIGENCE.—

Berlin.—Dr. Bramann has been promoted to the rank of Extraordinary Professor of Surgery.

Bologna.—Dr. Pellacani, Extraordinary Professor of Pharmacology in Genoa, has been appointed, after open competition Professor of Forensic Medicine.

Cadiz.—Señor Löhr has been selected, after competition, for the chair of Hygiene, and Señor Guedea y Calvo for that of Clinical Surgery.

Palermo.—Dr. Marcacci has been appointed Professor Extraordinary of Physiology.

Prague (Bohemian University).—Dr. C. Schwing has been promoted to the rank of Extraordinary Professor of Midwifery and Gynecology.

St. Petersburg.—Dr. Hoyer, Professor of Embryology and Histology, has been reappointed for a further term of five years, although he has completed thirty years of service. Ninety-five students have passed their final examination this term; of these, thirty-five obtained the note "very good" in more than one-half of the subjects, thus gaining the right to remain at the Academy for further study.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. Grigoroff, Ordinator of one of the Moscow hospitals, and author of works on syphilis; Dr. R. Hüber, of the Maria Magdalen Hospital, St. Petersburg; Dr. Ernst von Kade, who acted as assistant to Pirogoff during the Crimean War.

PROFESSOR LEYDEN has been summoned from Berlin to a consultation with the Czar's physicians.

TOPICS OF THE WEEK.

PROGRESS OF THERAPEUTICS.

From a general review of the progress of medicine and surgery during the year 1889, as given in *The Lancet*, we make the following extracts with reference to therapeutics:

"Notwithstanding the numerous public gatherings of the year at which pharmaceutical and therapeutical progress is currently reported, some of the best work is to be found in scattered papers which have been published independently of congresses and associations. It might, indeed, be said that knowledge cannot afford to wait for public meetings, any more than it can be specially manufactured for them. An observer who feels he has something to say, hastens into print in the hope of submitting his views to the experience and criticism of a wider public. On the other hand, the work brought before public gatherings is not infrequently of a somewhat sketchy description, and hence challenges, and sometimes finds, contradiction with increasing experience. Of all the meetings of the year, perhaps that held in Paris was the most disappointing in the material set forth. Still, the year has introduced many new remedies and many valuable contributions to the progress of therapeutics. Some of the new remedies, after being mentioned once or twice, seem to have speedily fallen into obscurity. The ardent accounts of early observers sink into silence which is eloquent. Pyrodine and exalgine are thus in the clouds; the former shrouded in many rumors of danger, the latter in great uncertainty as to its chemical composition. Strophanthus, however, has been attacked with great vigor, and however little its therapeutic position is improved, there is no doubt that Dr. Fraser's researches upon its composition will hold a deservedly high place. This drug has frequently caused disappointment, and a possible explanation appeared to lie in the different varieties with which the market was flooded as soon as it semed to bear any particular commercial value. Very early in the year the French Academy of Medicine agreed that preparations of strophanthus differed in their action from strophanthin, but could not decide which gave the best results. After a brief note upon the natural history of strophanthus read before the Royal Society of Edinburgh, Professor Fraser reserved his energies for the very elaborate paper upon the Chemistry of Strophanthus Hispidus, which was read at the British Pharmaceutical Conference at Newcastle. The reactions of strophanthin and strophanthidin were exhaustively dealt with, and the results of many important analyses and experiments were set forth with great lucidity. Still, in spite of this paper, strophanthus does not appear to be growing in favor with the profession. In its praise it is urged that it possesses no cumulative action, and that its effects are promptly produced; but, on the other hand, there seems no doubt that it may occasionally disturb the alimentary canal, and that, on account of the local irritation it produces, it is not convenient for hypodermic use. Much has been said upon the relative value of opium, morphine and codeine in diabetes; the opinion appears to be gaining ground that codeine has less controlling power than either opium or morphine, and that its therapeutic value is merely that of a weak or diluted morphine. Several highly interesting papers upon opium have touched upon methods of preparation and the use and abuse of opium as a luxury in China. Hypnotics continue to attract attention, and to form the subjects of more or less patient investigation. They illustrate the rule that the newest remedy acts best, and has the least to be said in its disfavor. Paraldehyde still claims many adherents, who refer apologetically to its taste and persistent odor. Urethane is less frequently mentioned; while acetone, hypnone and methylal were almost forgotten until they were brought up as hypnotics possessing inferior properties by Dr. Leech. Another hypnotic which seems, perhaps, to have passed the zenith of its glory is sulphonal; this was first lauded as the ideal hypnotic, which could always be relied upon to produce refreshing sleep without danger, but further experience shows that the sleep is sometimes preceded by excitement, that it is not always refreshing, and that after the employment of the drug there may be a persistent tendency to drowsiness, and occasionally an ataxic disturbance of gait. When, with these disadvantages, the insolubility and the high price are considered, there seems yet room for new hypnotics. These have been forthcoming in chloralamide and somnal; the former is just now passing through the phase when all benefits are observed and recorded, while ill effects (if any) are as yet undiscovered. The latter, which is also described as 'ethylirtes chloral-urethane,' although a very recent introduction, has already been assailed as being chloral-urethane under a new name. Perhaps the lesson of the comparative dissatisfaction given by hypnotics is that *insomnia* is not to be treated merely or chiefly by these remedies, but by attention to the causes and peculiarities of individual cases. The comparative uses of the recent antipyretics have been further investigated, and the positions of antifebrin, antipyrin, phenacetin and others have been more accurately determined; of these, as antipyretics, the general consensus seems in favor of antifebrin and phenacetin, the latter especially having found many advocates. Antipyrin, however, continues to be a fashionable drug and to be used in various forms of neuralgia and also in chorea, but there have been frequent warnings against its employment in conditions associated with cardiac weakness, and it would seem that, besides producing a rash, it may also occasionally give rise to hæmaturia and other grave symptoms. Apart from the above mentioned subjects, the year seems to have been characterized by a greater catholicity of interests than usual. The position of salts of lithia as solvents of uric acid, when compared with corresponding compounds of sodium and potassium, has been restated as being strictly proportional to the molecular weights of the solvents. Salol, of which much had been said concerning the treatment of cholera and of neurelgia, has more recently been recommended for the relief of the pain of renal calculus. The use of antacids in dyspepsia and gravel formed the subject of an interesting paper read at the meeting of the British Medical Association by Sir William Roberts, in which the preventive treatment of uric acid gravel was touched upon all too briefly. Lactose has been suggested as a diuretic, but the dose recommended presents some difficulties. A more striking innovation is the treatment of chronic uræmia by morphine, which is so contrary to the general principles upon which chronic uræmia has hitherto been treated that it calls for very careful investigation. For the form of diabetes or glycosuria, which is so frequent in elderly stout people, antipyrin has been advocated on account of its power of diminishing the excretion of urinary solids and water, while also allaying the excitability of the nervous system. Important papers have appeared in our pages emphasizing the value of sulphur, recommending the use of the ice-bag in pneumonia, and introducing Sir Joseph Lister's new antiseptic. The pharmacology of the group of nitrites has been further studied, and nitro-glycerine has been suggested as a substitute for alcohol. The troublesome itching so often associated with chronic forms of jaundice is said to be relieved by pilocarpine. The behavior of antipyrin, when prescribed with other drugs, the relationship and sources of the different alkaloids of the belladonna group, the chemical composition of the coca bases, and of cascara sagrada, the actions of ulexin, and the explanation of the actions of abrus præcatorius, have formed the subjects of much valuable and painstaking research during the year. It is needless to refer at length to the progress of pharmacy, but abundant indications show both the readiness of pharmacists to meet the requirements of the medical profession, and also the high estimation already formed of many of the newer preparations.

RICHARD VON VOLKMANN.

Before beginning his lecture in the Surgical Hospital in Berlin on the day after Volkmann's death, **PROFESSOR VON BERGMANN** addressed his hearers as follows: "About twenty-five years have elapsed since Volkmann began his academic career. He was one of the first surgeons who 'domesticated' Lister's antiseptic method in Germany, and the brilliant successes which he gained by it went far to confirm it and to gain its acceptance. Another part of his work was the study of cancerous tumors, and it occupied him till the last days of his life. His great excellence as a clinical teacher and as a military surgeon during the last campaigns is sufficiently known. But it is not only in his capacity as a scientist and operator, but also as a man, that we owe him our admiration, for he was in every respect so true a character, so sincere a man, ever mindful of his great and serious duties. He was a poet too, and a fresh breeze blows through his 'Songs from the Vale of the Sarle;' but especially his widely known and popular 'Reveries at French Firesides' are a proof of his poetic endowment, and a memorial of that time of the great war of 1870–71 which was so glorious for Germany. In him a man has departed who succeeded in gaining a name such as few possess, and who in full measure deserves that his memory be warmly cherished by men of science and by the nation." Dr. von Coler, Physician-General to the Prussian Army, has published the following tribute to Volkmann's memory: "Professor Richard von Volkmann, Surgeon-General *à la suite* of the ambulance corps, head of the surgical hospital of the University of Halle, Privy Councillor in Medical Affairs, and knight of high orders, died on the 28th inst., at Jena. The officers of the ambulance corps deeply and sorrowfully mourn the departure of one of its most eminent members, a master of German surgery and of the treatment of the sick and wounded in war. As in the campaigns of 1866 and of 1870–71, inspired by high patriotism and genuinely philanthropic feeling, friendly to all good and noble things, he devoted his great knowledge and skill to the service of the army, and was a helper and life-saver to thousands. He remained also after the wars as the honored deliverer of advanced courses of lectures for military surgeons, and as an active adviser, and an indefatigable promoter of the interests of the medical and surgical department of the army. The gratitude we owe the deceased lives on with his memory, which will for long be kept fresh by the rich fruits of his blessed work." On his death-bed Volkmann contributed 150 marks to the fund for the erection of a monument of the Emperor Frederick on the battle-field of Wörth. In the letter which accompanied the gift he wrote with a trembling hand: "I think, too, that the only suitable place for the chief national monument of the Emperor Frederick is Wörth." He added that, if his health permitted, he would do all that in him lay for the realization of the scheme. The streets through which his funeral passed in Halle were crowded with spectators.—*The Lancet.*

THE INFLUENZA EPIDEMIC.

The number of cases of influenza rapidly increased last week. Most of the lectures and courses at the hospital had to be suspended on account of the illness of the respective lecturers. The hospital wards, which are filled with patients every year at this season, are now so overcrowded that many patients have to lie on the floor, and numbers of people applying for admission have to be refused. Besides the civil, the military portion of the population is also suffering greatly from the disease, and in some regiments here 30 per cent. had to be sent to the military hospitals from that cause. There are, in addition, many thousands of the population under private treatment; but, as there is no compulsory notification, the number cannot be stated, even approximately. The weather has been somewhat foggy during the last few days, with a rising temperature. The cases which came under observation were altogether of a mild character, the fever lasting only from twenty-four to thirty-six hours, and the patients recovering after two days. Complications were rare, only two cases of catarrhal pneumonia having been observed as a result of influenza up to the present at the General Hospital; but several cases of relapse in patients who had already recovered from the first attack have been reported to me.

Accounts of the outbreak of the disease in several provincial towns of Austria have also been received here. The majority of the physicians in Vienna consider the disease to be non-contagious, and in the course of a lecture delivered last week Professor Nothnagel called attention to the miasmatic character of the disease, which does not spread along the usual lines of traffic.—Vienna correspondence *The Lancet.*

PRACTICAL NOTES.

THE TREATMENT OF INFLUENZA.

M. H. Huchard, writing in the *Revue Gén. de Clin. et de Thérap.* (Dec. 12th), speaks of nervous prostration as being a chief clinical characteristic of severe cases of influenza, requiring for its treatment quinine, alcohol, and in bad cases, even injections of caffein and ether. Quinine, he says, is indicated on account of the markedly remittent type of fever, and to moderate the evening exacerbation it suffices to give a full dose (5 to 15 grains) of the sulphate or hydrobromate in the morning. Smaller doses more frequently taken are useful for their tonic rather than antipyretic effect. In the neuralgic or rheumatoid form of influenza antipyrin (15 grains) combined with bicarbonate of soda (7½ grains) is recommended by M. Huchard, to be taken every four hours, or instead of antipyrin, phenacetin or salol (7 grains). Influenza often assumes a broncho-pulmonary form, and in certain cases is very grave. In the epidemic of "la grippe" in 1886, recorded by M. Menetrièr, the pneumonic forms were very asthenic. In such cases, tonics, milk, alcohol, and, in fact, general restorative measures are indicated rather than local applications to the chest. If the dyspnœa became severe, and the condition termed by Graves "pulmonary paralysis" ensues, then strychnia is of value; or in case of impending asphyxia or renal asthma, venesection; but when the asthenia itself threatens life, there should be no hesitation at resorting to hypodermic injections of ether, and especially of caffein. For the gastro-intestinal form, mild aperients, ipecacuanha, and the use of salicylates of bismuth or of magnesia, napthol, or iodoform to promote intestinal antisepsis, are indicated.—*The Lancet.*

THE MECHANICAL DIVISION OF CASEIN IN BOTTLE-FED INFANTS.

The problem of infant feeding, to the majority of physicians, presents some of the greatest difficulties found in practice.

Great as this is in a state of health or when an infant, fairly nourished, is, from any cause, suddenly deprived of the breast, it becomes still greater when digestive irritation or perhaps inflammation has set in.

During the last summer the writer had the usual number of annoying cases of indigestion, with and without intestinal inflammation, and was many times put to his wit's end for something in the way of easily digested food.

Reflection convinced me that if by some means I could mechanically separate the tough coagulum formed by the addition of the gastric juice of the child's stomach from the injested milk, a step in advance would be taken. Of course such division must be undertaken previous to feeding. After some experimenting, I conceived the following plan, which I have put into good use many times.

About two grains of good scale pepsin are dissolved in a dessertspoonful of lukewarm water, and then added to about four ounces of warm milk.

In the course of a few minutes coagulation of the caseine follows. The clotted milk is now put in a cheese cloth bag, and the bag lightly squeezed in the hand.

If the stomach is very irritable and the digestive power exceedingly bad, at first slight force is used. By this means we get, practically, whey, but with a stronger digestion more and more force is applied until almost all the caseine is forced through the meshes in rather fine particles. These are shaken up well in the fluid portions and given, small quantities at a time, by means of an ordinary nursing bottle. My experience has been that caseine thus broken up does not again become blended, but exists as a flucculent rather than a tough mass, resembling in this respect human milk.

Milk thus prepared is given subject to the same rules governing its use in ordinary cases.

It is not pretended that this is the best way of administering food to bottle-fed infants suffering from indigestion or entero-colititis, but only one way. When the reader, like the writer, has tried infant food after infant food, and sees the patient steadily growing worse, he will, I am sure, grasp at any rational, especially if it be simple, means of treatment.—Dr. Frank A. Morrison, *Weekly Med. Review.*

A FOOD FOR INFANTS.

In the summer diarrhœal troubles of infants, where milk in any form disagrees and vomiting is easily provoked, Jacobi says that a mixture which has rendered him valuable services is about as follows: Five ounces of barley-water, the white of one egg, from one to two teaspoonfuls of brandy or whisky, some salt and sugar; a teaspoonful every five, ten or fifteen minutes, according to circumstances. Mutton broth may be added to the above mixture, or may be given by itself, with the white of an egg and some salt. —*Archives of Pædiatrics.*

ECZEMA RUBRUM.

Man, past middle life, who was suffering with one of the forms of eczema, called eczema rubrum. The back of his left hand, fingers and wrist were covered with crusts and scales; the skin was infiltrated and thick; ulceration had exposed the true skin, which looked red and macerated. This is a sub-acute form of eczema. It began two years ago at the elbow with vesicles and pimples, which were close together. He had some fissures of the skin at that time. There is pain in the skin most of the time; appetite good and bowels regular. No cause could be found for it. Eczema is not purely local, but is a constitutional disease, dependent on some constitutional derangement. Externally he was ordered:

℞. Cocainæ hydrochloratis . . . . gr. iij.
Unguenti zinci oxidi benz. . . . . . ℥ iss.
Lactis sulphuris . . . . ʒ j.
Acidi carbolici . . . . gr. ij.

Misce, fiat unguentum et signe: Apply locally twice daily.

Internally he was given:

℞. Sodii arsenitis . . . . gr. j.
Extracti gentianæ . . . . gr. xx.

Misce, fiat pilulas No. xx, et signe: One pill three times a day,

One week later this man returned and was nearly well. Treatment was continued.—*Shoemaker.*

SUBSTITUTE FOR IODOFORM.

Dr. Benjamin has found the following to answer the same purpose as iodoform when used as a surgical dressing:

℞. Zinci oxidi . . . . ℥ ij.
Hydrarg. chlor. corros. . . . . . gr. j.—M.

Subject the oxide of zinc to a temperature of about 200° F. for a few hours before mixing, then mix when cool and place in an air-tight box until ready to use it. This is thoroughly antiseptic and does not possess the disagreeable odor of iodoform.—*Times and Register.*

ANTIDOTE FOR MORPHINE.

Professor Arpad Bokai (*Inter. Klin. Rundschau*) recommends picrotoxin as an antidote for morphine, on the ground that it exerts an antagonistic action to morphine on the respiratory centres; also that it is a powerful stimulant to the vaso-motor centre, and in this respect likewise an antagonistic to morphine; further, that the action of morphine on the cerebrum is directly opposed to that exerted by picrotoxin, and, finally Professor Bokai suggests that the previous administration of a small dose of picrotoxin might reduce the danger of asphyxia in chloroform and narcosis.—*Am. Jour. Pharmacy.*

Acute inflammation of the bladder is immediately relieved by the following mixture taken every two hours: Infusion of uva ursi, ʒiv; bicarbonate of soda. gr. x.—Woodbury—*Times and Register.*

Antiseptic solution for sponges is recommended by Prof. Berrens to be made by dissolving thymol 1, in alcohol 4, and adding distilled water 1,000 parts.—*Gaz. Gynoc.*

SOCIETY PROCEEDINGS.

American Academy of Medicine.

Annual Meeting at Chicago, November 13, 1889.

DR. JOHN H. RAUCH, Secretary of the Illinois State Board of Health, presented the following paper:

ILLINOIS ARMY BOARD OF MEDICAL EXAMINERS.

As a contribution to the history of the regulation of the practice of medicine by the State of Illinois, I submit the results of the work of the Illinois Army Board of Medical Examiners during the war of the rebellion, gathered from the records of the Adjutant-General's office, from reports and papers of Dr. H. A. Johnson, of Chicago, and from my own personal experience and observation.

Although, as shown in our reports on medical education, efforts had been made, from time to time for more than forty years,[1] to establish some test of fitness of those engaged, or offering to engage, in the practice of medicine, the creation of this Army Board and the work which it accomplished were the first practical results in this direction. From the hundreds of medical men who tendered their services with patriotic zeal—often with an excess of patriotism which obscured their recognition of the demands of military service—there were selected a corps of over 660 surgeons and assistant surgeons whose record as faithful, competent, and in many cases brilliant officers was not surpassed by any similar body engaged in the defense of the Union. It is not too much to say that the reputation for endurance, pluck and effectiveness which Illinois troops early won and sustained throughout the war, was due in no small measure to the skill, forethought and devotion of the Illinois medical staff. This has been fully testified to by the highest medical authorities.

These gentlemen, impartially and conscientiously selected solely on the basis of personal worth and professional fitness, went into the service and the field more thoroughly equipped and better qualified for the discharge of their duties than did any other class of volunteer officers, either of the line or the staff. I very distinctly remember the impression created on my own mind when, after having served for some time in departments where Illinois regiments were scarce, a corps composed almost entirely of our own State troops was added to the command in which I was serving as Medical Director. The hospital staff and appointments were in excellent and effective order; the medical and surgical records were complete and intelligently kept; the sanitary discipline and police regulations of the camps were admirable, and, as a result, the proportion of "effectives for duty" was maintained much above the average—in striking contrast to regiments from other States in the same command.

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[1] While still a territory and sparsely settled, only along the river fronts and water courses of Southern Illinois, efforts were already being made by the pioneer practitioners to regulate the practice of medicine and to foster the cause of medical education. In 1817 an Act of the Territorial Legislature—with a preamble reciting that "well regulated medical societies have been found to contribute to the diffusion of true science, and particularly to the knowledge of the healing art"—divided the Territory into two medical districts. All that portion of the Territory lying east of the meridian line, "running due north from the mouth of the Ohio," formed the Eastern Medical District, and that west of said line formed the Western Medical District. For historical summary of these efforts see "Medical Education and the Regulation of the Practice of Medicine in the United States and Canada," "Fifth Annual Report of the State Board of Health of Illinois," p. 52 et seq.

This is said without invidiousness and only as bearing upon the work of the Army Medical Examining Board, the first practical step in Illinois toward regulating the practice of medicine under the authority of the State. It may also, and properly, be said that the survivors of those who were thus selected returned to the State at the close of the war to speedily occupy the foremost places of professional and social influence in their respective communities. About 160 of these are still living, but their ranks are rapidly thinning out, and it has occurred to me, while there is yet time, to put on record in the proceedings of this Board some account of the manner in which the medical staff of the Illinois contingent was provided, and a complete roster of the names of its members. This seems proper as a matter of justice and in the interest of history.

In the organization of the first brigades of Illinois troops the State Legislature, in April, 1861, constituted a Medical Board to carry out the intent of a general order of the War Department, implied in the phrase which authorized the appointment of regimental medical officers, "after having passed an examination by a competent medical board appointed by the Governor of the State." This order was not mandatory, but permissive only, and it was left to the Governors of the several States to determine whether or not it should be carried into effect; in fact it was not, in many of the States, made operative, and medical officers were appointed in some by a State officer known as the Surgeon-General, and in other States by the Governors, on recommendation of regimental officers, civilians or politicians. In the former case, where the selections were made by the Surgeon-General of the State, the appointments were for the most part wise, but not uniformly so; and on the other hand, where there was no medical authority to discriminate between applicants, the two extremes of qualification were found—a few well qualified and a large number of incompetents.

Governor Yates, however, who early won the appellation of the "soldier's friend" by his devotion to those who went forth to battle, seized this opportunity for securing competent medical officers for the 200,000 men which Illinois sent into the field during the war. In one of his papers on this subject Dr. Johnson tells the following incident, which well illustrates the attitude of our great "War Governor" toward the Army Medical Board:

[Extract from "Medical War Memories," by H. A. Johnson, M. D., Chicago, read before the Loyal Legion, Chicago, February 9, 1888; p. 8.] "During the first week of our work a physician, and an intimate friend of Governor Yates, came before the Board and was found so deficient that we could not recommend him even for assistant surgeon. We had already rejected several candidates of much pretension, and as they were still in Springfield and had, to some extent, the confidence of the colonels who had nominated them, a united effort was made to override the action of the Board. We were represented as either ignorant or prejudiced, our examinations were characterized as technical, and our decisions influenced by personal friendship, or by other unnamed motives.

"On the evening of the day when the Governor's friend was sent back the Governor came to my room and asked why Dr. —— had not been recommended? I told him that the Board gave the doctor a patient hearing and that the answers to practical questions, as well as his written dissertation, made it impossible for us to ask for his appointment. That as we were made the judges of qualification, we must do our duty in that station in which it had pleased the Governor of Illinois to place us. He replied, 'I am extremely sorry that Dr. —— has failed to pass, but I am not surprised.' Then turning to me he added, 'For our boys who go from home and its comforts to the battlefield and its dangers I want to do the very best I can, and I pledge you that I will commission no one as surgeon or assistant surgeon, whom you cannot recommend.' This promise he kept very faithfully, and although for a few days there was a great clamor for the scalps of the Medical Board, there came from the Executive chamber no further questioning as to reasons for our action."

As first constituted the Illinois Army Board of Medical Examiners consisted of Drs. N. S. Davis, of Cook County, Charles Ryan, of Sangamon County; Geo. W. Stipp, of McLean County; William M. Chambers, of Coles County, and Dr. Carpenter, of St. Clair County. Candidates were required to pass an examination before this Board and obtain its recommendation as a condition of appointment and commission. As time developed the need for further troops, and new calls were made, the Medical Board was reorganized June 14, 1861, under General Order No. 25 of the War Department. This new Board consisted of Drs. Hosmer A. Johnson, of Chicago: Henry Wing, of Collinsville; Henry W. Davis, of Paris; O. M. Bryan, of Sycamore, and Robert Roskotten, of

Peoria. Dr. Davis was subsequently appointed Surgeon of the Eighteenth Illinois Infantry, and Dr. D. H. Green, of Salem, was appointed to fill the vacancy. Dr. Bryan and Roskotten were promoted to the positions of brigade surgeons in the fall of 1861, and during the greater part of 1862 the Board consisted of Drs. Johnson, Wing and Green. In the fall of 1862 Dr. A. L. McArthur, of Joliet, and Dr. Daniel Brainard, of Chicago, were appointed to fill the vacancies created by the promotion of Drs. Bryan and Roskotten. Dr. Johnson, as President of the Board, continued to devote himself to this work, and to frequent inspections of the sanitary and medical condition of Illinois troops, as well as to active service in the field on occasion, until February, 1865; and the experience thus gained has since been continuously employed most usefully for the public and the profession in the broad field of preventive medicine and in the various health services of the city of his residence, of the State and the Nation.

At the date mentioned, February, 1865, Drs. Johnson and Wing resigned. Dr. Rufus S. Lord, of Springfield, was appointed a member, and the Board was thenceforth, until the close of the War—two months later—composed of Drs. Brainard, Green and Lord.

Drs. Wing, Brainard, Green and Lord are long since dead, and Dr. McArthur recently; Drs. H. A. Johnson, N. S. Davis, W. M. Chambers, O. M. Bryan and Robert Roskotten still survive.

The first session of the permanent Board—appointed June 14, 1861—was held in the city of Springfield on the 18th day of June, 1861, when an organization was effected by the election of H. A. Johnson, President, and O. M. Bryan, Secretary. Subsequently, upon the resignation of Dr. Bryan, Dr. Wing was elected Secretary.

Soon after its organization the Board received a letter from the Secretary of War, instructing it to be governed by the Army regulations: "To investigate carefully the physical ability, moral character and professional attainments of each candidate, and to report favorably for appointment and promotion in no case admitting of a reasonable doubt."

In order to accommodate the candidates as far as possible, sessions of the Board were held at Springfield, Chicago, Cairo, Alton and in the field.

I quote the following verbatim from the report of the Board, made December 13, 1862, to Adjutant General Fuller, showing the work accomplished during the first nineteen months:

"The whole number of candidates whose names have been registered on our books is 793. The whole number examined, as reported in the list which accompanies this, is 495. Of these 159 have been recommended for the office of Surgeon; 266 have been recommended for the office of Assistant Surgeon; and 70 have been rejected.

"In addition to these cases reported, a very considerable number of candidates, after a partial examination, have become conscious of their deficiencies, and have requested permission to withdraw their application. This request has, we believe in every case, been granted, with the understanding that it was not to be made a matter of record, and that they were in all respects to be considered as unexamined.

"There is still another class of cases in which the examinations are not yet completed. Men of good moral character, and with the ability to be useful, but who are deficient in some one department of medicine or surgery, have, in several instances, been advised to withdraw for a time, and to devote themselves to study with reference to a further examination. These cases are still unrecorded.

"For convenience we may divide the candidates into three classes:

"1. Those whose study and practice have made them familiar with the whole field of medicine and surgery. This class is necessarily very small, but the Board is happy to know that there are such men in the service.

"2. Those who, assuming the title of doctor, have never received the first rudiments of a medical or surgical education. As a general rule, we have found their ignorance only equaled by their impudence. It is unfortunate that these men have often gained the confidence of regiments and the nomination of Colonels to the exclusion of better but more modest applicants.

"3. By far the larger proportion of those who have presented themselves have been men of moderate attainments, capable of much usefulness in private practice, but unaccustomed to study, and able only with difficulty to express their ideas or demonstrate their knowledge.

"In the examination of the first and second classes, but little time has been consumed, but in order to judge correctly of the third class, much patience has been necessary. The habits of mind, methods of reasoning and probable action in any given case, have been subjects of study, and the Board has often been compelled to form a judgment not so much upon the actual knowledge developed in the examination as upon the evidences of good sense, sound judgment and adaptation to the service. The examinations have consisted in an investigation:

"1. Of the moral character of the candidate.
"2. Of his professional character.
"3. His experience and adaptation to the work.
"4. His knowledge of his profession."

During the War a total of about 1,250 applicants were examined by this Board in the manner already described, and 664 were recommended for appointment and commission—188 as Surgeons and 476 as Assistant Surgeons. Of these latter 114 were subsequently reëxamined and promoted to the rank of Surgeon.

The professional and personal character of the men thus selected was so high that—although many of them had not graduated in medicine and consequently were without the diploma specified in the Medical Practice Act as entitling its possessor to the certificate of the State Board—the credentials of this Army Medical Examining Board were accepted as proof of the qualifications required by the Act, and the survivors in 1877 were registered as certificated physicians by the formal action of the State Board.

Of this number, I take pleasure in saying, there was only one who was dismissed the Army. As nearly as I can ascertain, of the total number who passed this Examining Board, there are only 240 now living. They will be found, as a rule, to be among the most reputable and prominent practitioners in the communities in which they reside. A roster of all who passed this examination will be printed in the forthcoming Tenth Annual Report of the Illinois State Board of Health.

NECROLOGY.

David Prince, M.D.

We are pained to record the death of Dr. David Prince, who died at his residence in Jacksonville, December 19, aged 73 years. His last illness was pneumonia, and he suffered but a few days.

Dr. Prince was born in Brooklyn, Windom county, Conn., June 21, 1816. Later he removed with his parents to Canandaigua, N. Y., where he was educated at the academy. Then he began the study of medicine at the College of Physicians and Surgeons, New York, and completed it at the Ohio Medical College at Cincinnati. At the latter city he assisted for a year and a half the distinguished surgeon, Dr. Muzzy.

In 1843 he moved to Jacksonville, and for five years was professor of anatomy in Illinois College. During his professorship, Dr. H. K. Jones, of that city, and Dr. Wing, of Collinsville, were graduated from the department. For three years he practiced at St. Louis and delivered a course of lectures on surgery at the St. Louis Medical College. In 1852 he returned to Jacksonville. Fifteen years later he bought Judge Thomas' property on South Sandy street, and established the sanitarium, which has ever since enjoyed uninterrupted prosperity and an extended reputation, and has proved invaluable to hundreds of patients who have been treated there.

Dr. Prince paid especial attention to surgery, and he was a famous expert in that line of medicine, both as an operator, a student, an inventor and a writer. He knew surgery thoroughly in every detail. He was a man of progressive ideas also. He read all the current literature on the subject, even French and German publications in the original, and he kept thoroughly abreast of the times. When any new thing met with his approval he adopted it. He wrote numerous pamphlets and periodical articles which have enjoyed an extensive circulation and a high authority among the profession. His treatise on Plastics and Orthopædics has been used as a text book in medical colleges. He visited Europe twice, once as a delegate to the international medical congress at London in 1881, and later to the Copenhagen congress in 1884. On these occasions he visited the hospitals in London, Paris and Berlin, and made careful investigations at them. During the latter part of the war, for fourteen months, he was brigade surgeon in Graves' brigade, Army of the Potomac. When soldiers of his brigade were captured and sent to Libby prison, he voluntarily gave himself up and went along with them in order that he might attend them. He was a prisoner himself, but was accorded special privileges, such as walking about the city with a guard. At the close of the war he was employed at New York ten months by the sanitary commission in writing of the medical history of the war. He was a prominent and valuable member of many societies, among them being the International Medical Congress, the American Medical Association, the American Association of Railroad Surgeons, the American Surgical Association, the Illinois State Medical Society, of which he was once president, the National Public Health Association, the Morgan County Medical Society, of which he was a founder and charter member, the Tri-State Medical Society, the Jacksonville Microscopical Society, and the Club, one of the strongest of Jacksonville's literary societies. He enjoyed the friendship and esteem of many distinguished medical men, among them being Dr. Hamilton, of New York, and Dr. N. S. Davis, of Chicago. He was the first man in the State of Illinois to administer ether.

Dr. Prince was a man of magnificent brain and splendid character. Not in medicine alone, but in all knowledge he was learned and profound. Almost everything that pertained to the welfare of mankind interested him, and his interest was not only passive and contemplative. It was active and energetic. He was a philanthropist. He gave money liberally. He gave his time and skill many times to patients without charge to them. He was one of Jacksonville's most public-spirited citizens. He helped along many public enterprises. The public welfare was his private care, and he promoted it by every means in his power. On all public questions his pen was quick to furnish valuable suggestions in communications to the press, which were remarkable for the thoroughness and impartiality with which the subject had been investigated and considered. He was a clear, cool-headed, far-sighted student and thinker, a man who liked to investigate everything fully and carefully with an eye single to arriving at the truth. He was a member of the Board of Education for many years, and in that capacity rendered the schools of the city invaluable services. The death of Dr. Prince is a calamity to the profession, to the city and to his family.—*Peoria Med. Monthly.*

BOOK REVIEWS.

FOODS FOR THE FAT. A Treatise on Corpulency and a Dietary for Its Cure. By NATHANIEL EDWARD DAVIES, M.R.C.S. American Edition. Edited by CHARLES W. GREENE, M.A., M.D. Pp. vii, 138. Cloth, 75 cts. Philadelphia: J. B. Lippincott & Co. 1889. Chicago: A. C. McClurg & Co.

In this work, after a short discussion of the relations subsisting between food and corpulency, in which the various systems for the reduction of superfluous fat are briefly considered, the author spreads before us a vast array of very enticing dishes of which we are assured that the most corpulent of mankind may partake freely and with benefit. Particular attention is given to the uses of saccharin in the treatment of corpulency, and the author informs us that from personal experiments he can assure us that for all household purposes where it has been necessary to use sugar saccharin is a perfect substitute. The author does not aim at the very rapid reduction of weight, but rather at the sure and safe removal of unnecessary burdens of fat.

ABDOMINAL SURGERY. By J. GREIG SMITH, M.A., F.R.S.E., Surgeon to the Bristol Infirmary, Lecturer on Surgery Bristol Medical School, late Examiner in Surgery University of Aberdeen, Fellow of the Royal Medical and Chirurgical Society, London, Honorary Fellow of the American Society of Obstetricians and Gynecologists, etc. Third edition. Pp. 800. Philadelphia: P. Bakiston, Son & Co. 1890.

Some indication of the necessity for such a work as the one before us may be drawn from the fact that it has passed rapidly to a third edition in two years. The work is exactly what it purports to be—a systematic work on abdominal surgery thoroughly revised to date. The designer's scope can be readily obtained from a glance at the headings of the sections, which are fourteen in number, and as follows:

I. Diagnosis of Abdominal Tumors.
II. Abdominal Operations Considered Generally.
III. Operations on the Ovaries, the Fallopian Tubes and the Broad Ligaments.
IV. Operations on the Non-Gravid Uterus.
V. Operations on the Gravid Uterus, and for Ectopic Gestation.
VI. Operations on the Stomach.
VII. Operations on the Intestines.
VIII. Operations on the Kidneys.
IX. Operations on the Liver and Gall Bladder.
X. Operations on the Spleen.
XI. Operations on the Pancreas.
XII. Unclassified Operations.
XIII. Supra-Pubic Cystotomy.
XIV. Operations for Abdominal Injuries and Inflammations.

To the work is appended a comparatively exhaustive bibliography, not by any means an unimportant addition to any comprehensive scientific treatise. The style of the writer is good, and the method, together with the well selected subject matter, makes a very entertaining and instructive book for the student and a valuable reference book for the surgeon. The illustrations, while not elaborate, are well conceived and executed. The work gives one the impression of being the outcome of the labors of a practical surgeon, and it certainly is; and while the views of the author on antiseptic methods may not gain for him the unqualified applause of the extreme germicidists, they will certainly be found consistent with successful surgery. The publishers' work is excellent.

TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS. Fourth session, held in Washington, D. C., Sept. 18, 19 and 20, 1889. Philadelphia: Wm. J. Dornan. 1889.

This volume contains nineteen papers, which are remarkable for the uniformity of their excellence. All the papers are on subjects relating to internal medicine, and most of them exhibit a large amount of original research. No better work can be shown by any Society.

A HANDBOOK OF DERMATOLOGY FOR THE USE OF STUDENTS.—By A. H. OHMANN-DUMESNIL, A.M., M.D., Professor of Dermatology, St. Louis College of Physicians and Surgeons; Consulting Dermatologist to the St. Louis City Hospital, etc. Illustrated. Pp. viii, 167. St. Louis: St. Louis *Med. and Surg. Journal* Publishing Co.

This is one of a growing class of books instigated by the request of students to their teachers for a *résumé* of forthcoming lectures. It is not intended, as the writer frankly admits, "to fill a long felt want, but rather as a guide to students in their reading." Employed in this manner it may certainly be of advantage to such readers, but it is no more than an outline of the subject of dermatology, and can in no wise serve as a substitute for the complete works. The author has done well in giving the synonyms, scientific and vulgar, for the most approved names of the diseases considered. This is often of no small advantage to the student.

TRANSACTIONS OF THE THIRTY-NINTH ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY, held in Jacksonville, May 21–23, 1889. Cloth. Pp. xxxiv, 409. Chicago: Jameson & Morse Co.

The work of this Society for the present year is of a very creditable character. In all thirty-four papers, covering a wide range of topics, were read. Much interest was evidently manifested in the proceedings, and the members present were agreed that the meeting was one of the most successful ever held by the Society. The Transactions appear in particularly good form; indeed, it is not too much to say that the volume may well serve as a model for reports of this character.

The next meeting of the Society will be held in Chicago, beginning Tuesday, May 20, 1890.

NINTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF NEW YORK. Transmitted to the Legislature February 26, 1889. 8vo, paper. Albany. 1889.

The text proper of this very voluminous report comprises 609 pages; but an equal amount of "bulk" is added consisting of maps and diagrams, many of which are of little or no value, and could have been left out without injury to the report. If such reports as the above are worth publishing at all, they are certainly worth preserving, and should be put up in a more durable and less clumsy style than the present pamphlet form. However, the report shows that the Board is doing much valuable work. The report of the Public Analyst is interesting, but much of his work is of value only from a commercial standpoint and not as affecting the public health.

SAUNDERS' QUESTION-COMPENDS, NO. 5, ESSENTIALS OF OBSTETRICS. Arranged in the form of questions and answers; prepared expressly for students of medicine by WILLIAM EASTERLY ASHTON, M.D., Dem. of Clin. Obstet. in Jefferson Med. Col., Chief of Clinics for Diseases of Women in Jefferson Med. Col. Hosp., etc. Illustrated. Tenth thousand. Pp. xi–220. Philadelphia: W. B. Saunders. London: Henry Renshaw. Melbourne: George Robertson & Co. 1890.

This book is one of the very best of the Saunders series. The subject is treated in a remarkably clear and concise manner, with due regard to the proportionate representation of its various branches. The book is thoroughly well prepared and is carefully indexed. It cannot fail to subserve a useful purpose in the direction indicated.

ASSOCIATION NEWS.

American Medical Association—Forty-first Annual Meeting.

Section of Practice of Medicine.

The officers of the Section of Practice of Medicine request all those who desire to read papers in that Section at the meeting of the American Medical Association, to be held in Nashville, Tenn., May 20–23, to send the titles thereof to either of the undersigned before Feb. 15, 1890.

J. H. MUSSER, Chairman,
N. E. cor. 40th and Locust Sts., Philadelphia, Pa.
H. MCCOLL, Secretary,
Lapeer, Mich.

Section of Laryngology and Otology.

All those who desire to read papers before the Section of Laryngology and Otology, at the next meeting of the American Medical Association, to be held in Nashville, Tenn., May 20–23, are requested to send the titles of the same to either of the undersigned before February 15, 1890.

JOHN O. ROE, M.D., Chairman,
28 N. Clinton St., Rochester, N. Y.
FRANK H. POTTER, M.D., Secretary,
273 Franklin St., Buffalo, N. Y.

MISCELLANY.

THE EPIDEMIC.—What name shall be given to the tiresome, if not grave, epidemic which in less than a month has overrun Europe from North to South, and which is now spreading to the New World? Is it the grippe, the dengue, or the influenza? At the Société Médicale des Hôpitaux there is no more harmony of opinion on this score than at the Société de Médecine Pratique or the *Académie. M. Legroux regards* it as *an* atypical grippe; Sevestre and Chauffard consider it as a twin disease, one feature of which is the classical grippe, and the other a disease characterized by important phenomena, such as pain, *eruption and absence of catarrh*; Nicolas and Roussel recognize *in it* the dengue.

At the Académie Proust declared that the real epidemic presents neither the phenomena of the dengue nor those of the classical grippe. Bronardel, comparing the epidemic with earlier ones that have preceded it, accounts of which have been preserved, pronounces in favor of the grippe. in spite of the absence of catarrh. Léon Colin adopts the same opinion, as does also M. Bouchard, but for other reasons, mainly those associated with the contagious character of the disease. Dujardin-Beaumetz and Bucquoy refrain from committing themselves, but incline to the opinion that the disease is the dengue, the characteristics of which have been modified by its invasion of the cold countries.—*L'Union Méd.*

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.—At the stated meeting of the Medical Society of the District of Columbia, held January 6, 1890, the following officers were elected for the year 1890: President—Swan M. Burnett, M.D.; Vice-Presidents—George N. Acker, M.D., and G. Wythe Cook, M.D. Treasurer—C. W. Franzoni, M.D.; Recording Secretary—Samuel S. Adams, M.D.; Corresponding Secretary—Thomas C. Smith, M.D.;

Librarian—J. H. Mundell, M.D.; Board of Examiners—Geo. N. Acker, M.D., Samuel S. Adams, M.D., C. H. A. Kleinschmidt, M.D., H. L. E. Johnson, M.D., and Llewellyn Eliot, M.D.; Board of Censors—John T. Winter, M.D., L. L. Friedrich, M.D., and George C. Ober, M.D.

PROF. VIRCHOW is engaged upon a new edition of his "Cellular Pathology," which he intends to publish on the occasion of the International Medical Congress. The last (fourth) edition of this work appeared in 1872.

FOREIGN PHYSICIANS PRACTICING IN FRANCE.—In compliance with numerous demands on the part of the medical profession, which complains of the large number of foreign physicians engaged in practice in France, the Minister of Public Instruction has just decided that no authority will be granted to foreigners to practice medicine in France except after thorough enquiry regarding their fitness, together with an examination of the worth of the diplomas which they present.

HEALTH IN MICHIGAN.—For the week ending January 4, 1890, the postal card reports indicate that scarlet fever, influenza, puerperal fever, cerebro-spinal meningitis, inflammation of brain, remittent fever, membranous croup, cholera infantum and cholera morbus increased, and that measles, typhoid fever, whooping-cough and dysentery decreased in area of prevalence. (Influenza increased 103 per cent. over the preceding week.)

At the State Capital the prevailing winds for the week ending January 4 were southeast, and compared with the preceding week the temperature was lower, the absolute humidity was less, the relative humidity and the day and night ozone were more.

Including reports by regular observers and others, diphtheria was reported present during the week ending January 4 and since at 27 places—Bainbridge tp., Breitung tp., Caseo tp., Detroit, Evart, East Saginaw, Genesee tp., Grand Rapids, Gaines tp., Howell, Hastings, Hillsdale, Kalamazoo, Lansing, Muskegon, Manistee tp., Richland tp., Rich tp., Ravenna tp., Saginaw, Spalding tp., Tarch Lake tp., Taylor tp., Texas tp., Trowbridge tp., West Branch and Winfield tp.; scarlet fever increased by 83 per cent. and was reported at 33 places—Brighton, Bliss tp., Center tp., Carunna, Concord, Caledonia tp., Dundee, Denver tp., Detroit, East Tawas, Eagle tp., Fabius tp., Grand Rapids, Grass Lake, Howell, Howell tp., Howard City, Kalamazoo, Keeler tp., Metamora tp., Muskegon, Monroe, Newberg tp., New Buffalo, Novi tp., Newton tp., Plymouth, Superior tp., Spring Lake, Sand Beach tp., St. Johns, West Branch and White Water tp.; typhoid fever at 18 places—Albion, Cadillac, Cannonsburg, Corunna, Clam Lake tp., Detroit, Deerfield tp., Grand Rapids, Gladstone, Muskegon, Maple Grove, Metamora tp., North Star tp., Penn tp., Richland tp., Taylor tp., Wyandotte and Wakefield tp.; measles decreased by 64 per cent., and was reported at four places —Charlotte, Fowler, Grand Rapids and Otsego.

LETTERS RECEIVED.

Dr. S. E. Strong, Pilot Knob, Mo.; Dr. A.W. Strickler, Scottdale, Pa.; Dr. Wm. Barton Hopkins, Philadelphia; F. C. Lewis, Catskill, N. Y.; T. W. Hannaford, London, Eng.; Dr. W. H. Seibert, Steeltin, Pa.; Dr. Philip Coombs Knapp, Dr. Henry O. Marcy, Harvard Medical School, Boston; E. Steiger & Co., New York; Dr. W. M. Harsha, Chicago; E. P. Donnell Mfg. Co., Chicago; Dr. J. W. Small, New York; Dr. Harold N. Moyer, Chicago; Chicago, Milwaukee and St. Paul Ry., Milwaukee, Wis.; The Subscription News Co., Chicago; Dr. D. Bernardino Collins, Muscoda, Wis.; Dr. W. H. Oliver, Fernwood, Ill.; American and Continental Sanitas Co., New York; Mrs. Brevington, St. Mary's, O.; W. H. Sheiffelin & Co., New York; Dr. Gershom H. Hill, Independence, Ia.; Stanley Day, New York; Paris Medicine Co., Paris, Tenn.; Chesebrough Mfg. Co., New York; Londonderry Lithia Spring Co., Nashua, N. H.; Fairchild Bros. & Foster, New York; Dr. L. C. Loomis, Washington, D. C.; Dauchy & Co., New York; Dr. Hugh Hamilton, Harrisburg, Pa.; Dr. Joshua M. Cooper, Meadville, Pa.; Dr. Geo. Seiler, Alma, Wis.; Dr. R. M. Wyckoff, Brooklyn, N. Y.; Dr. John F. Moran, Washington, D. C.; J. H. Bates, New York; Battle & Co., St. Louis, Mo.; Dr. M. Donelly, New York; Travers E. Gooding, Paris, Tex.; Dr. M. M. Togg, Hightstown, Pa.; Dr. J. T. Kane, Patterson, N. J.; Philadelphia Polyclinic, Philadelphia; Dr. J. M. Barrier, Illawara, La.; Lambert Pharmacal Co., St. Louis, Mo.; Horlicks Food Co., Racine, Wis.; Doliber, Goodale & Co., Boston, Mass.; Dr. Wm. W. Pearse, Waukegan, Ill.; Rio Chemical Co., St. Louis, Mo.; W. P. Cleary, Brooklyn, N. Y.; Woman's Medical College, New York; Dr. L. G. North, Tecumseh, Mich.; Parke, Davis & Co., Detroit, Mich.; Dr. L. S. Trowbridge, Detroit, Mich.; Dr. H. Soule, Ann Arbor, Mich.; Dr. Seely, Faribault, Minn.; Dr. A. E. Campbell, New Holland, Ill.; Dr. John O. Roe, Rochester, N. Y.; Dr. H. Wardner, Anna, Ill.; Dr. H. Holbrook Curtis, New York city; Dr. H. McColl, Lapeer, Mich.; Dr. A. H. Carpenter, Milwaukee, Wis.; Dr. J. H. Brooks, Dixon, Ill.; Dr. F. S. Crossfield, Hartford, Conn.; Hance Bros. & White, Philadelphia; Dr. Henry B. Baker, Lansing, Mich.; Dr. Herbert C. Jones, Decatur, Ill.; Chas. Stover, Amsterdam, N. Y.; Dr. S. C. Plummer, Jr., La Verne, Minn.; J. H. Bates, New York City; Dr. S. T. Gray, Albia, Ia.; Dr. Arthur Sweeny, St. Paul, Minn.; Dr. Fred Dunn, Council Grove, Kan.; Dr. J. W. Long, Byan, O.; Dr. W. Brodie, Detroit, Mich.; Dr. James Milligan, Indianapolis, Ind.; Dr. M. G. Parker, Lowell, Mass.; The Kenyon News and Postal Subscription Co., Chicago.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from January 11, 1890, to January 17, 1890.

By direction of the President, Major Leonard Y. Loring, Surgeon, will report in person to Col. Benj. H. Grierson, Tenth Cavalry, President of the Army Retiring Board at Los Angeles, Cal. Par. 3, S. O. 6, A. G. O., January 8, 1890.

By direction of the Secretary of War, Capt. R. B. Benham, Asst. Surgeon, is relieved from duty in the Dept. of the Platte, to take effect upon the abandoning of Ft. Laramie, Wyo., and will then report to the commanding officer at Madison Bks., N. Y., for duty at that station. Par. 8, S. O. 6, A. G. O., January 8, 1890.

Capt. Charles S. Black, Asst. Surgeon U. S. A., leave of absence granted by the commanding officer, Ft. Du-Chesne, Utah, is hereby extended twenty-three days, with permission to apply to the Adjutant General of the Army for an extension of three months. Par 3, S. O. 1, Dept. of the Platte, January 11, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending January 18, 1890.

P. A. Surgeon H. B. Scott, granted extension of sick leave for one year from February 1.

Medical Inspector Geo. W. Woods, from Mare Island Navy Yard and to the U. S. S. "Charleston."

Surgeon Ezra Derr, detached from the U. S. S. "Nipsic" and ordered home.

Surgeon Dwight Dickinson, from Mare Island Hospital and to the Navy Yard.

P. A. Surgeon L. B. Baldwin, ordered to the U. S. S. "Michigan."

P. A. Surgeon F. J. B. Cordeiro, from hospital, Mare Island, and to the "Nipsic."

P. A. Surgeon J. M. Edgar, from the U. S. S. "Michigan" and to the Naval Hospital, Mare Island, Cal.

Asst. Surgeon T. B. Bailey, from the U. S. S. "Dale" and to the U. S. S. "St. Louis."

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ORIGINAL ARTICLES.

THE INDICATIONS FOR, AND LIMITATIONS OF, THE OPERATION FOR THE REMOVAL OF THE UTERINE APPENDAGES.

Read in the Section of Obstetrics and Diseases of Women, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY E. E. MONTGOMERY, M.D.,
PROFESSOR OF GYNECOLOGY IN THE MEDICO-CHIRURGICAL COLLEGE, OBSTETRICIAN TO THE PHILADELPHIA HOSPITAL.

The enthusiasm engendered by a new remedy or new surgical operation is likely to lead to its application in directions scarcely dreamed of by its originators, an application which, very frequently, the sober judgment of the future will not sustain. Probably no operation has had a more widely extended application, no operation is fraught with more beneficial or injurious influences, as the indications for it may be correctly or incorrectly interpreted, than that for the removal of the uterine appendages.

An operation which is capable of modifying the whole future of the individual, and her relation to those about her, should have its indications clearly set forth and the limitations within which it should be performed distinctly outlined. In studying the history of the procedure we find it introduced and advocated upon three lines of indications: 1. To bring about the menopause in what are known as the neuroses. 2. For the relief of symptoms arising from pathological conditions in the tubes and ovaries. 3. For the purpose of establishing the menopause, because of grave and threatening disease in the uterus. While the general aims of the operation as here expressed are entirely legitimate, when confined to properly selected cases, it cannot be denied that the operation has been considered as indicated, and has been performed upon many women who might have recovered equally as good health without mutilation.

The indications for operation may very properly be divided into physiological and pathological. The former comprises those done with a view to the establishment of the menopause, without any reference to the presence of pathological conditions in the organs removed. The latter is done for the removal of diseased organs primarily, and may be partial or complete.

The pathological division may be classified as follows:

A. The ovaries:

1. Inflammation, acute, chronic, suppurative (abscess) and perioöphoritis.
2. Displacement (prolapse, hernia).
3. Cirrhotic and cystic ovaries.

B. The Fallopian tubes.

1. Inflammation, salpingitis.
2. Pyosalpinx.
3. Hæmatosalpinx.
4. Hydrosalpinx.
5. Fallopian pregnancy.

To the physiological class should be assigned:

A. The uterus:

1. Uterine myomata.
2. Errors of development, absence or maldevelopment of the uterus, with menstrual molimen.
3. Insuperable displacements, with severe nerve symptoms.
4. Insuperable obstruction to menstrual flow (may reside in the vagina).
5. Chronic metritis (areolar hyperplasia), with repeated abortions.

B. The neuroses:

1. Mania, puerperal mania, menstro-mania, nympho-mania, etc.
2. Epilepsy, hystero-epilepsy, convulsions, cramps, dancing fits, etc.
3. Hysteria.

It is true that it is difficult to draw the line in making the distinctions herein mentioned. Many of the cases operated upon from a physiological standpoint will be found to present pathological changes; but when these conditions are so insignificant as to present no physical signs, and do not ordinarily produce symptoms necessitating operation, they may justly be classed as suggested. In the development of the operation it has frequently been done as an empirical measure, without the indication either from a physiological or pathological standpoint being unquestionably marked. The physiological division has more probably afforded opportunity for the greatest abuse of this operation. All varieties of disordered nerve manifestation are likely to be exaggerated preceding and during the menstrual period, which has led to radical operations when little was to be gained thereby.

The removal of the appendages in mania and epilepsy should be considered as indicated only when we can trace, either in the origin or progress of the disease, a close association with the performance of their function. It will not be sufficient to show that during the menses the individual is more likely to suffer with epileptic seizures, or to have an exaggeration of the intellectual derangement, but that the trouble either originated in menstrual disturbance, or in a marked degree occurs with the menstrual periods, and infrequently, or to a slight extent only, in the intervals. Where the disordered nerve condition can be traced to the influence of the sexual system, the removal of the appendages, with the consequent cessation of the periodical congestion, has been attended with the most delightful results. On the other hand, where the operation has been done upon mistaken premises the benefit has been unattained.

It is not to the credit of our humanity that a poor woman, so unfortunate as to be bereft of her intelligence, should be obliged to undergo the danger and discomfort of an operation of doubtful utility. Nympho-mania affords no hope of abatement through this operation. The ovaries and tubes, as have been well established in operations upon man and the lower animals, do not govern the sexual appetite or the power to gratify it. The orientalists recognized that the removal of the analogue of the ovary in the male, the testicle, did not destroy the desire or the ability for coition, and amputated the penis of the eunuch, in addition to castration. Hence, the only plea for the operation in this form of disease should be the prevention of conception. The writer has seen the appendages removed to arrest the practice of masturbation, but without the slightest favorable influence.

Hysteria, with its hydra-headed manifestations, has afforded a prolific field for the practice of this procedure. Many cases, as experience has shown, could have been equally as effectually relieved by other plans of treatment, and have preserved their power of performing a woman's every function. Certainly in every such case the operation should be held as a *dernier ressort*, and then performed only after a full knowledge upon the part of the patient of the influence it is likely to exert upon her future life.

The wisdom of establishing artificially the menopause should not be questioned where the uterus is absent or faultily developed, with an effort apparent upon the part of nature to establish the menstrual flow; in uterine displacements, non-restorable to proper position and producing marked nerve symptoms; in cases of obstruction to the menstrual flow, congenital or acquired, whether existing in the vagina or in the uterus, when it is evident that these conditions cannot otherwise be readily and successfully overcome.

Chronic metritis, or the condition known as areolar hyperplasia, has been given as an indication for the operation. It cannot be disputed that in some cases of this disease, where, if anything, the state of inflammation exaggerates the susceptibility to pregnancy, and at the same time renders the uterus incapable of retaining and nourishing the developing ovum, the production of the menopause would add greatly to the comfort and health of the individual. The difficulty, however, of determining the cases in which it is expedient, and the danger of its abuse, should render its performance infrequent.

The utility of the removal of the appendages for the arrest of hæmorrhage and growth in uterine myomata has been too frequently demonstrated to be questioned. Many authenticated cases have been recorded in which the operation has been followed by immediate arrest of hæmorrhage and subsequent marked decrease in the size of the tumor. It should be remembered, however, that the operation is not always followed by the menopause. Several patients operated upon by the writer have subsequently suffered from bloody discharge, in some amounting to hæmorrhage; one has menstruated regularly for two years, another for six months. In consideration of this it has seemed preferable, when feasible, to do a supra-vaginal hysterectomy.

The pathological division affords a field in which the indications for operation are more readily and accurately determined, and yet one in which the propriety of the procedure in individual cases may be questioned. Suppurative inflammation in the ovary or tube should be considered a positive and imperative indication for the operation; the only question should be as to how soon the procedure can be accomplished. The condition is one of danger to the patient so long as it remains—far greater, indeed, than she would experience in its removal. This condition will be found complicated with chronic peri- or para-metritis, acute attacks of which it is frequently the cause. Indeed, it may be accepted as good practice, when a patient suffers from recurring attacks of either trouble, to make an exploratory incision, with a view to the removal of the offending organs.

The presence of chronic inflammation in the ovaries and tubes is not necessarily an indication for operation. Many such cases readily recover under less severe and dangerous plans of treatment. Polk and Imlach have done good work in demonstrating that the separation of adhesions and shortening the broad ligaments by suitably applied sutures will prove curative in conditions that were supposed to positively indicate the necessity for the removal of the appendages. The aim of the gynecologist should be to restore, rather than destroy diseased organs. It is not infrequently found that pain in the ovarian region and its attendant reflex phenomena is due to bands of adhesion between the ovary and loops of the intestine. The peristaltic action of the latter keeps the organ in a continuous state of congestion and irritation. Separation of these bands relieves the pain and discomfort, curing the patient as effectually as would the removal of the ovaries. We have a similar train of symptoms induced when the uterus is retroverted and the ovaries bound down by pelvic adhesions. Many of these cases do not require laparotomy in order to bring about a cure. Several have come to the writer's notice where he has been able, by passing two fingers in the rectum and pressing up the cervix, with the thumb in the vagina, to tear off the rectum from the uterus and set free the appendages. It is true that this plan of procedure is only applicable where the adhesions are of limited firmness. In extensive and firm adhesions the danger of laceration of the tube or the ovarian structure would be too great.

Oöphorraphy offers the preferable method of dealing with ovarian displacement, unless caused by marked enlargement from chronic disease.

The inflammatory adhesions, the complete destruction of function, and the reflex phenomena arising from the diseased condition, make removal of the appendages advisable in the majority of cases of hydro- and hæmatosalpinx.

No one can practice abdominal surgery without appreciation of the great boon the introduction of this operation has been to suffering woman, and we cannot do better, in conclusion, than to urge:

1. That the operation for the removal of the appendages should be promptly performed in every case in which it is evident that relief can not be otherwise secured.
2. It should be considered as a *dernier ressort* where there is a hopeful prospect of restoration to health by less dangerous methods, or without the sacrifice of the reproductive function.
3. Its consideration should be dismissed in every case capable of restoration to health by other plans of treatment.

1818 Arch street.

THE USE OF MENTHOL IN DISEASES OF THE UPPER AIR-PASSAGES.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY FRANK HAMILTON POTTER, M.D.,
BUFFALO, N. Y.
LECTURER ON DISEASES OF THE NOSE AND THROAT, MEDICAL DEPARTMENT, NIAGARA UNIVERSITY.

The object of this paper is to present a clinical report on the use of *menthol* in the diseases of the upper air-passages. The writer's attention was first called to this drug in this connection by some remarks of Rosenberg on a paper by Krause, of Berlin, entitled "The Therapy of Laryngeal Phthisis," read in the Laryngeal Sub-section of the Fifty-ninth Meeting of German Naturalists and Physicians in Berlin, September, 1886. Since that time Rosenberg has contributed several papers on this subject, and other writers also have occasionally considered it. Most of the studies, however, that are on record relate to the action of menthol on laryngeal disease, and that chiefly of tubercular origin or arising in tuberculous patients.

Prompted by the favorable opinions expressed by all writers in regard to the use of the drug in the diseases just mentioned, it occurred to me to use it in the inflammatory diseases as seen in the nose, pharynx and mouth as well as in the larynx. The results obtained with it from the date first alluded to to the present time are here presented. These results will be given in a general way and dry statistical detail will be avoided as much as possible.

In reporting the observations concerning the action of any single remedy there is always considerable danger of claiming more for it than a careful study of the facts will warrant. The enthusiasm of the observer may lead him to attribute to it much that rightfully belongs to the natural reparative processes. If this mistake has been made further observation will, no doubt, correct it. I can only say that no discrimination has been exercised, and that favorable and unfavorable results have been alike noted at the time of observation and carefully reconsidered in making this report.

Your attention is first directed to the way the drug has been used. Combinations with other drugs have been almost entirely avoided. Menthol has been simply dissolved in an oil in strengths varying from 1 to 40 per cent.; olive oil is preferred by most writers, but I have used one of the fluid vaseline preparations called *oleum petrolina*. Dr. E. L. Shurley, of Detroit, I believe, was the first to call attention to this preparation. It is almost without odor, unchanged by temperature, and of a consistency easily sprayed by any atomizer with a moderately large orifice to the spray tube. Tubes made on the Sass or Devilbiss patterns, or the hand and office atomizers made by the Davidson Rubber Co., numbered 52, 59 and 65, answer the purpose thoroughly. These last are especially mentioned because great difficulty was experienced in obtaining an atomizer that would spray an oily fluid. Most of those advertised for that purpose fail to meet the requirements. Menthol has also been used by means of vaporization and inhalation, and applied by means of an applicator well wrapped with cotton. No one method has been used to the exclusion of the others, and often all of them have been employed with the same patient. Menthol can be dissolved in the *oleum petrolina* up to a strength of 50 per cent. Those above 25 per cent. have been used by inhalation, those below by direct application. If the solution is too strong it will cause great pain and patients will refuse to have it applied. This is so especially in the nose, and I cannot agree with some writers who report using it there as high as 20 per cent. Without cocaine I have never been able to apply to the nasal mucous membrane more than a 1 or 2 per cent. solution, excepting in atrophic conditions, which will be considered by themselves. In the pharynx, the mouth and the larynx much stronger solutions can be used.

When applied in the proper percentage menthol produces a pleasant, cool sensation. It is analgesic to some degree and second applications can be made in increased strength without causing discomfort. It is interesting to notice that when used in full strength on the first application patients differ as to the character of the resulting sensation. Some will describe it as a feeling of intense cold and others as a feeling of great heat. This is another illustration of the fact that extreme degrees of heat and cold cannot be easily distinguished.

Let us now inquire into the results obtained from the use of menthol, and first in the diseases of the nose. In the acute diseases of the nose it does not appear to be of much benefit.

It has been used in the ordinary acute rhinitis and in its various forms, such as the membranous and those occurring in patients with the syphilitic and rheumatic constitutions. The feeling of coolness was grateful many times to the patients, but the drug did not seem to have any controlling influence over these conditions. In rare instances where a simple chronic rhinitis, without hypertrophy or deformity, was seen, treatment with menthol yielded better results. I have seen three such cases where supplementing the ordinary treatment with a weak solution of menthol assisted materially in restoring the patients to health. This statement can be made with some degree of certainty because they had been treated in the ordinary way for some time without progress. After operations upon the nasal passages, especially in those cases where a mild antiseptic is necessary, menthol has rendered good service. The soothing properties of the oil combined with the germicidal qualities of the drug have kept the wounds free from sepsis and thus hastened repair. So far as known it has never produced any toxic symptoms, and can therefore be used freely. Following operations, after the nasal passages have been thoroughly cleaned, the parts have been covered with as strong a solution as can be borne by means of the spray, and the excess then blown away. I think to this practice can be attributed the freedom of the cases which form the basis of this report, from the mild sepsis sometimes seen after operations within the nose. These cases have been singularly free from any symptom of sepsis; and as the method of operation only differs in the use of this drug from that followed by more skilful operators who report some cases where a mild sepsis was observed to follow surgical interference with the nasal passages, it seems that menthol should be credited with this pleasing result.

In the treatment of atrophic rhinitis menthol has a place. It cannot supplant other measures, but can supplement and assist in the relief of this most discouraging affection. It has been tried in the following manner: After cleansing the parts a solution that can just be felt has been thoroughly applied. It is remarkable often how strong a percentage will be borne. I have used it in this disease as high as 35 per cent. without the patient complaining. After a few days, however, the parts will become more sensitive and a weaker solution must be applied. With this returning sensitiveness a corresponding benefit takes place in the patient. The dryness, odor, and the accumulation of hardened mucus masses are partially relieved. Beginning with the strength just mentioned, a gradual decrease has been found necessary until, at the end of several weeks, but a 5 per cent. solution would be tolerated. The condition of the patients has improved step by step with the decrease in the toleration of the drug. Whether this improvement will be permanent or not it is difficult to say, as the cases have been too recent, but the results already observed seem to warrant a thorough study of the action of menthol in this disease. Besides the office applications it was found convenient to fit out patients with an atomizer containing the proper solution, with instructions to spray it into the nose from one to three times daily. This plan will lessen the frequency of the office visits, keep the nasal passages free from odor, and prevent the clinging of masses of inspissated mucus to their walls. All this adds to the comfort of the patients and does not interfere in the least with the employment of other means for the relief of the disease.

In the pharynx and mouth the results with menthol have been very satisfactory, and perhaps more positive than in other parts of the upper air tract. It has been used in acute and chronic inflammations of these organs, especially in the latter, with some success. If the ordinary sore throat is taken in its early stages and the parts brushed with a strong solution, frequently repeated, the attack may often be limited both in intensity and duration. This has been seen repeatedly in patients subject to sore throat. They will appear as soon as an attack begins and ask that their throats be treated in the same way as before. I believe these to be cases where the cause is local rather than constitutional. In those depending on some systemic condition this treatment does not as often succeed.

Many cases of chronic inflammation in these organs with most diverse etiology have been treated with menthol. In some of these cases the relief has been marked and permanent, in others partial and temporary. After careful consideration of the results the following general rule can be formulated: When a chronic inflammation follows an acute attack, with the organs above and below the pharynx free from serious disease, the relief from this treatment has been permanent; associated with chronic nasal or laryngeal disease the relief has been partial and temporary. This conclusion is in keeping with the known relations of the pathological processes of the upper air-passages and the action of drugs upon them. However, it must be borne in mind that a certain class of cases are relieved by this remedy, and that therefore it is a valuable addition to the list of our therapeutic agents.

Menthol has not been used in acute inflammation of the larynx, but in subacute and chronic inflammation of that organ it has been tried extensively. The results do not differ in any marked degree from those following its use in the pharynx, and the rule just given is referred to as expressing the conclusions of my observations concerning its action here. The applications to the larynx have been by means of the spray, as it was found that this method was more pleasant to the patients and gave as good satisfaction as when applied directly.

Before concluding this report a few words should be said of the action of menthol on the tubercular lesions. My experience has not been large in these cases, and therefore it is with some hesitation that they are referred to at all; still I have seen a few cases, and the importance of the subject justifies the record of the results even if the number of observations is not large.

Menthol has been used in five cases of laryngeal phthisis, all of them consecutive upon disease of the lungs. Two were very far advanced, and only lived two and four months respectively from the date of the first observation. Even in these desperate cases the effect of menthol was marked, and they, perhaps, will best illustrate its local action, as but little improvement took place from any general treatment. The drug was used both by inhalation and by the spray, the strength of the former being 30 per cent. and that of the latter 10 to 20 per cent. The inhalations were given frequently for a few minutes at a time; the spray was used from three times a day to once every other day according to circumstances.

My limited experience confirms the observations of Rosenberg, Hyndman, and Beehag.

The hypersecretion is diminished and the larynx becomes cleaner. The ulcers also show the good effect and heal after a time, leaving smooth cicatrices. The infiltrations and hypertrophies are slower in responding, and it is sometimes necessary to apply lactic acid or touch them with the galvano-cautery point, or even to use the curette before they will yield. Following up these methods with the menthol treatment seems to hasten the repair as in the case of the ulcers. As the local condition improves dysphagia is lessened and nutrition promoted. The satisfactory results attending the application of this drug to tubercular lesions can be accounted for not only by its analgesic action and by its power to control superficial inflammations, but also by its influence on the bacillus tuberculosis. The investigations of Koch, Sormain and Bagnatelli show that menthol is highly destructive of this bacillus, and to this fact is due, no doubt, the benefit resulting from its use.

In conclusion we may say that while menthol seems to be a drug with a future of great usefulness, it needs to be carefully studied and investigated, so that we may become familiar with its action and know its limitations.

273 Franklin St.

Dr. Jonathan Wright, of Brooklyn, spoke of Heryng's method of curetting laryngeal ulcers and applications of lactic acid. He had seen very good results from the combined use of curetting and lactic acid, more particularly in causing subsidence of subjective symptoms, but he has also seen healing of the ulcers under its use. If we only gain relief from the subjective symptoms we have done a great service to humanity, as there is no disease more appalling in the sufferings it inflicts on its victims.

THE CLINIC.

THE TREATMENT OF LOCOMOTOR ATAXIA BY SUSPENSION, ETC.

A Clinical Lecture Delivered at the City Hospital, St. Louis, Mo., December 21, 1889.

BY ALEXANDER B. SHAW, M.D.,
PROFESSOR OF DISEASES OF THE MIND AND NERVOUS SYSTEM BEAUMONT MEDICAL COLLEGE.

[Reported for THE JOURNAL.]

Now, gentlemen, we come to the consideration of the treatment of tabes dorsalis, posterior spinal sclerosis, or locomotor ataxia, as you may be pleased to term it. For this man, who is suffering from that advanced form of the disease known as "Charcot's disease," of course we can do nothing but make the remainder of his days as comfortable as possible; but if the patient be seen during the early stages of the disease, when the lancinating pains are the most prominent symptoms, great benefit will frequently follow the administration of the fluid extract of ergot in doses of from 30 to 60 minims three times a day, and the use of heavy static sparks to the whole of the spine, particularly over the region of the lumbar enlargement of the cord, every second or third day. The bromides of sodium and potassium in from 40 to 60 grain doses, repeated two or three times a day, have sometimes seemed to be of service, but I place more reliance on the ergot than the bromides. When the paroxysms of pain are very severe, you should unhesitatingly resort to the hypodermic use of morphine..

A few moments ago you heard me say, when speaking of the etiology of this disease, that I was not one of those that believed that the fact that a history of syphilis, so frequently discoverable in the history of those suffering from locomotor ataxia, is to be received as an evidence that syphilis is as frequently, as some authorities claim, the cause of posterior spinal sclerosis. Nevertheless, if a history of syphilis is given I invariably place the patient on what used to be known as the mixed treatment; that is, the simultaneous administration of the bichloride of mercury and the iodide of potassium, thus giving the patient the benefit of the doubt.

In addition to the treatment just outlined I have, since last May, been practicing the suspension treatment, first recommended by Mitchell and Rochochowsky, as modified by myself, for the relief of the pains of locomotor ataxia, with the most pronounced success. Not only, however, is the suspension of patients a means of alleviating their suffering so far as pain is concerned, but it has been productive of much good in other directions. By it the vesicle troubles are modified, the gait, appetite, digestion and general nutrition are improved, and sometimes the sexual desire is stimulated and firm erections secured. I am satisfied, gentlemen, that the treatment by suspension promises very much in locomotor ataxia, and that it should, if possible, be resorted to in almost all cases of this disease and in many other affections. I am now treating a case of what might be called traumatic ataxia by suspension with marked success. The patient developed ataxia after an injury to the head and spine.

I have here the report of a case of alcoholic or pseudo-tabes treated at the female hospital of this city, quite recently, by the suspension treatment entirely. This report was made to me by the resident physician and superintendent of that institution, Dr. W. B. Dorsett, for publication, but as it has never appeared in print I shall read it to you before giving you the technique of the suspension procedure in suspending these patients.

Louisa C., age 36, French, married at 15, prostitute for last four years, drinking considerable beer, wine and whisky all of this time; mother died of consumption; no family history of insanity, epilepsy or rheumatism; always enjoyed excellent health, excepting an attack of erysipelas last winter; has had three children, two of whom are dead; never miscarried; no history of venereal trouble. February 1, 1889, had a chill, shortly became jaundiced, and had intense pain of a shooting character in legs, which soon became stiff, and in a short time so weak that she could not stand. On admission to female hospital, April 25, 1889, she was utterly helpless, not even able to hold a lead pencil nor raise her hands to her face; could not turn herself over in bed, could not lift either limb, and would instantly fall over if placed in a sitting posture; pricking the arms or legs with a pin was not felt for twelve seconds, when there was a double sensation. Patient was put on iodide of potassium, but there was no improvement. The above condition continued until June 21st, when I suggested a trial of the suspension treatment with this suspension apparatus. Dr. Dorsett, superintendent and resident chief physician at the hospital, consented, and we at once made 50 lbs. traction on the neck at intervals of ten seconds for one-half minute. For the foregoing facts I am indebted to Dr. Dorsett, and I now quote from his report of the case to me:

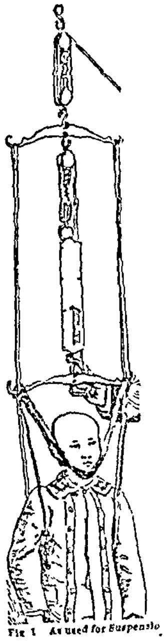


Fig 1 As used for Suspensio

"Four or five days after the first suspension she complained of less pain in limbs, and claimed that she felt better every way.

"July 3d she was again suspended, 96 lbs. traction being made every ten seconds for one minute, no bad symptoms following; on the contrary she claimed she felt better. A few days later she was able to write her name legibly, something which was impossible a few days before, and had been since April last. The suspensions were continued every three or four days, with gradually increasing duration and traction on neck until July 25th; the length of the former was two minutes and the amount of the latter was 112 lbs.; patient weighs 150 lbs. On July 25th she began to menstruate for the first time in eight months.

"July 29th—Menstruation ceased; feels well, is improving rapidly; can bear entire weight on right, and more than half her weight on left leg. Suspended to-day with 20 lbs. fastened to her feet; traction on neck, 100 lbs. every ten seconds; duration, 190 seconds in two séances.

"August 5th—Patient sits up much of the time. Sensation is almost normal, combs her hair, feeds herself, cuts her own bread and meat, has a fair grip, moves her feet quite well, and I have strong hopes of seeing her walking in a short time.

"Suspended again August 5th, 180 seconds, two séances, 25 lbs. to feet, 100 lbs. traction.

"August 12th.—Suspended; 190 seconds, two séances, 33 lbs. to feet, 100 lbs. traction on neck.

"Improving rapidly in every way. Took three steps (short ones), steadying herself by holding to the back of a chair.

W. B. DORSETT, M.D.

August 12, 1889."

While I have seen recovery from alcoholic tabes occur after other modes of treatment, I am perfectly satisfied that the extremely rapid and continuous improvement in the foregoing case is almost, if not entirely, without parallel, and I attribute it, I think correctly, to the suspension accurately performed.

The technique of the operation of suspension as practiced by me is as follows:

Placing the patient directly under the apparatus, adjust axillary supports and halter, padding the latter at the back of the neck with a piece of thick felt. Now elevate the patient by traction on the cord playing on the upper set of pulleys; then lift such amount of patient's weight as may be desired from the axillary supports by pulling on the cord playing on the pulleys to which the spring balance is attached. Usually first suspensions do not exceed thirty seconds. If well borne, their duration is increased from one-half to one minute at each successive suspension, until the patient is permitted to hang from four to eight minutes.

Suspensions are performed every second or third day. During the first suspension I seldom lift more than 40 lbs. of the weight by the head, but usually increase about 20 lbs. at each succeeding suspension, unless the patient complains of too much pain in the jaws or neck, until the entire weight of the patient is supported by the halter. Every ten seconds, while the patient is suspended, I gradually, yet quite rapidly, elevate, then lower the cross-bar supporting the halter in which the head is swung by pulling on the cord playing over the pulleys to which the spring balance is attached, so that the desired amount of stretching will be made, thus increasing the traction to the desired maximum, and diminishing the amount of tractile force from 20 to 30 lbs. every ten seconds. The amount of force exerted will be indicated by the spring balance. I have in some cases, where suspension was remarkably well borne, allowed patients to remain hanging steadily at the maximum tension as long as three and four minutes. In four cases extra weights have been attached to the feet, while the whole weight of the body was being sustained by the neck. In one 16 lbs., in another 28, in the third 33, and in the fourth 40 lbs., were thus added.

The halter must be so tightly adjusted that the chin will not slip through it, and yet loose enough to allow it to rest well upon the occiput. If too tightly buckled, the maxillary articulation will be strained and considerable pain produced in its vicinity. Never make the ropes fast to anything; either have an assistant to hold the ropes by which the patient is elevated, or make a noose in it about 2½ feet from the floor, in which place your own foot, and thus be ready at any moment to lower your patient. Where patients will do so I frequently substitute elevation of the arms while suspended, thus throwing extra weight on the halter, watching the spring balance the while to note the number of pounds sustained by the neck, for rythmical traction on the rope playing on the lower set of pulleys; but in many cases patients refuse to practice this procedure because of the pain it produces in the arms as they roll over the axillary supports.

St. Louis, December 21, 1889.

TREATMENT OF OPHTHALMIA NEONATORUM.—The prophylaxis of ophthalmia neonatorum, according to BUSCARLET, consists in irrigation of the mother's vagina during labor with 1–2000 solution of sublimate. Immediately after the birth of the child a collyrium of 1 part of nitrate of silver to 150 parts of water should be used. If purulent ophthalmia appears in spite of these precautions the following treatment should be employed: in mild cases, every hour during the day and every two or three hours at night irrigation of the eyes should be made with the following solution:

Distilled water.	1,000 grams.
Alcohol.	10 "
B. naphthol.	0.40 centigr.

This treatment should be followed by the application to the eyelids of a cotton compress moistened with the naphthol solution and held in place by a flannel bandage.

In severe cases with considerable purulent secretion irrigations must be used as often as possible, and a nitrate of silver solution in the strength of 1–30 should be used every twelve hours, care being taken to neutralize at once the excess of the solution with salt water. When improvement takes place the solution may be weakened to 1–100. The mother must take pains that she be not herself infected; she must keep the child's eyes bandaged during nursing and afterwards bathe the mammary region with a solution of alcohol or naphthol; if fissures are present the breasts must be covered with antiseptic compresses.—*Jour. de Méd. de Paris.*

DEATH FROM CHLOROFORM DUE TO RESPIRATORY FAILURE.—A telegram to *The Lancet* from Dr. Lauder Brunton, now in India, states that, after experiments on 490 animals, he has reached the conclusion that the danger of chloroform is asphyxia, not heart failure—a direct reversal of Dr. Brunton's former views.

TABLES, AND DIAGRAMS REPRESENTING THE SAME,

ACCOMPANYING A PAPER ENTITLED

THE CLIMATIC CAUSATION OF CONSUMPTION.

Read in the Section of State Medicine, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY HENRY B. BAKER, M.D.,
OF LANSING, MICH.

(*Concluded from pages 85 and 129.*)

TEMPERATURE, AND DEATHS FROM PHTHISIS IN LONDON, ENGLAND.

TABLE 10.—Exhibiting, by months, for a period of thirty years, 1845–1874, the relation of average deaths per week in London, England, from Phthisis, to the average atmospheric temperature for the same period of time. This table is graphically represented in Diagram 10.

Thirty Years, 1845–1874.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. deaths per week from phthisis . . .	154	153.25	160.2	162	157.25	150	144.75	136.50	132.4	135.75	146	147
Av. temperature, degrees Fahr	38.6	40.1	40.2	48.6	52.7	60.0	64.2	63.5	59.1	52.2	44.2	40.5

TEMPERATURE, AND SICKNESS FROM CONSUMPTION IN MICHIGAN.

TABLE 11.—Exhibiting, by months, for a period of nine years, 1878–1886, the relation between sickness in Michigan from consumption, and the average atmospheric temperature for the same period of time. This table is graphically represented in Diagram 11.

Nine Years, 1878–1886.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. percentage of reports of sickness . .	65	68	69	70	67	65	63	61	62	64	64	63
Av. temperature, degrees Fahr	20.72	22.68	30.23	44.06	55.84	64.83	70.27	67.88	61.43	35.87	35.87	25.47

TEMPERATURE, AND DEATHS FROM BRONCHITIS IN LONDON.

TABLE 12.—Exhibiting, by months, for a period of thirty years, 1845–1874, the relation of average deaths per week in London, England, from bronchitis, to the average atmospheric temperature for the same period of time. This table is graphically represented in Diagram 12.

Thirty Years, 1845–1874.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. deaths per week from bronchitis . .	193.5	172.5	165	127.5	90.0	63.2	48.25	41.0	48.2	76.5	141.25	190.2
Av. temperature, degrees Fahr	38.6	40.1	42.2	48.6	52.7	60.0	64.2	63.5	59.1	52.2	44.22	40.5

TEMPERATURE, AND SICKNESS FROM CROUP IN MICHIGAN.

TABLE 13.—Exhibiting, by months, for a period of ten years, 1877–1886, the relation between sickness in Michigan from membranous croup and the average atmospheric temperature for the same period of time. This table is graphically represented in Diagram 13.

Ten Years, 1877–1886.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. percentage of reports of sickness . .	2	10	8	7	5	4	2	3	4	6	9	10
Av. temperature, degrees Fahr	20.56	23.62	29.80	44.33	56.08	65.10	70.52	68.14	61.67	50.83	36.04	26.60

TEMPERATURE, AND SICKNESS FROM "RESPIRATORY DISEASES" IN INDIA.

TABLE 14.—Exhibiting, by months, for a period of three years, 1883–1885, the relation of sickness from "respiratory diseases" among the native troops in India to the average atmospheric temperature for the same period of time. This table is graphically represented in Diagram 14.

Three Years, 1883–1885.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. cases of sickness per 1,000 soldiers .	102.8	71.6	51.8	38.6	33.8	26.6	25.5	23.7	31.8	37.7	59.9	93.8
Av. temperature, degrees Fahr	68.7	70.6	79.1	83.9	85.2	84.8	83.3	82.7	82.3	80.5	74.2	69.1

TEMPERATURE, AND SICKNESS FROM INFLUENZA IN MICHIGAN.

TABLE 15.—Exhibiting, by months, for the ten years, 1877–1886, the average percentage of reports stating the presence of sickness from influenza in Michigan, also the average atmospheric temperature at stations in Michigan for the same period of time. This table is graphically represented in Diagram 15.

Ten Years, 1877–1886.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. percentage of reports of sickness . .	55	61	59	52	38	28	20	21	29	33	41	48
Av. temperature, degrees Fahr	20.56	23.62	29.80	44.33	56.08	65.10	70.52	68.14	61.67	50.83	36.04	26.60

TEMPERATURE, AND SICKNESS FROM TONSILITIS IN MICHIGAN.

TABLE [illegible], for the eight years, 1879–1886, the average percentage of reports stating the presence of sickness from [illegible] the average atmospheric temperature at stations in Michigan for the same period of time. This table [illegible] Diagram 16.

Eight Years, 1879–1886.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. percentage of reports of sickness. .	60	61	60	53	47	42	33	32	37	45	55	60
Av. temperature, degrees Fahr	19.91	21.77	28.82	43 04	55.98	64.79	69.78	66.25	61.11	50.68	35.56	25.82

TEMPERATURE, AND SICKNESS FROM BRONCHITIS IN MICHIGAN.

TABLE 17.—Exhibiting, by months, for the nine years, 1877–1885, the average percentage ot reports stating the presence of sickness from bronchitis in Michigan, also the average atmospheric temperature at stations in Michigan for the same period of time. This table is graphically represented in Diagram 17.

Nine Years, 1877–1885.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. percentage of reports of sickness. .	77	78	77	72	61	54	43	41	49	55	67	72
Av. temperature, degrees Fahr	20.77	23.89	29.76	44.14	56.23	65.30	70.73	68.23	61.73	50.72	36.23	27.28

TEMPERATURE, AND SICKNESS FROM PNEUMONIA IN MICHIGAN.

[illegible] for the eight years, 1877–1884, the average percentage of reports stating the presence of sick-n[illegible]o the average atmospheric temperature at stations in Michigan for the same period of time. T[illegible] Diagram 18.

Eight Years, 1877–1884.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. percentage of reports of sickness. .	62	66	62	56	42	27	17	14	18	23	36	48
Av. temperature, degrees Fahr	21.43	25.60	31.04	44.48	56.60	65.54	70.68	68.85	62.05	51.34	35.99	27.25

ABSOLUTE ATMOSPHERIC HUMIDITY, AND SICKNESS FROM PNEUMONIA IN MICHIGAN.

TABLE 19.—Exhibiting, by months, for a period of ten years, 1877–1886, the relation of sickness in Michigan from pneumonia to the average absolute humidity. The two lines in this table are graphically represented in Diagram 19.

Ten Years, 1877–1886.	Annual Av.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Sickness from pneumonia . . .	36.5	57.9	63.1	61.1	53.9	39 3	25.1	16.1	13.3	16.7	21.3	33.4	44.8
Average absolute humidity . . .	3 44	1.38	1.51	1.81	2.75	3.91	5 27	6.07	5.84	4.98	3.71	2.30	1.73

TEMPERATURE, AND DEATHS FROM PNEUMONIA IN LONDON, ENGLAND.

TABLE 20.—Exhibiting, by months, for the thirty years, 1845–1874, the average number of deaths from pneumonia in London, England, also the average atmospheric temperature for the same period of time. This table is graphically represented in Diagram 20.

Thirty Years, 1845–1874.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. deaths per week from pneumonia .	98	86	91	82	67	53	42	37	43	66	98	108
Av. temperature, degrees Fahr	38.6	40.1	42.2	48 6	52.7	60.0	64.2	63.5	59.1	52.2	44.2	40.5

TEMPERATURE, AND SICKNESS FROM SCARLET FEVER IN MICHIGAN.

TABLE 21.—Exhibiting, by months, for a period of ten years, 1877–1886, the relation which the sickness in Michigan from scarlet fever sustained to the atmospheric temperature: Exhibiting the average atmospheric temperature, and what percentage of all weekly reports received stated that scarlet fever was under observation of the physicians who made the reports. (Over 41,000 weekly reports of sickness, and over 190,000 observations of the atmospheric temperature are represented in this table). This table is graphically represented in Diagram 21.

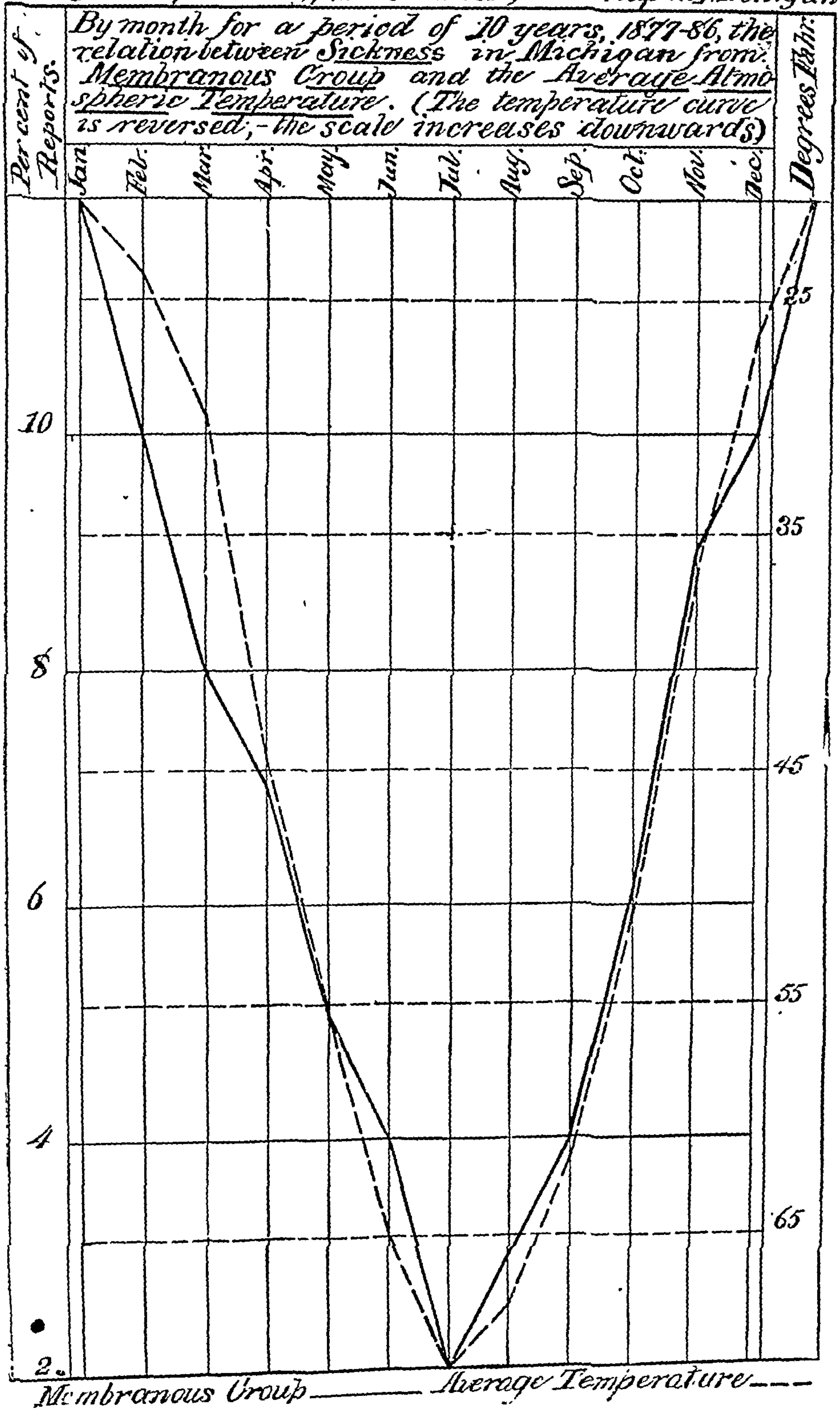
Ten Years, 1877–1886.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. percentage of reports	22.3	23.5	23.9	21.6	19.6	17.0	13.7	11.8	12.5	16.0	17.3	18.1
Av. temperature, degrees Fahr	20.56	23.62	29.80	44.33	56.08	65.10	70.52	68.14	61.67	50.83	36 04	26.60

TEMPERATURE, AND DEATHS FROM SMALL-POX IN LONDON, ENGLAND.

TABLE 22.—Exhibiting, by months, for thirty years, 1845–1874, the relation between the weekly average number of deaths from small-pox and the average atmospheric temperature in London, England. Records of 30,000 deaths are included in this table. This table is graphically represented in Diagram 22.

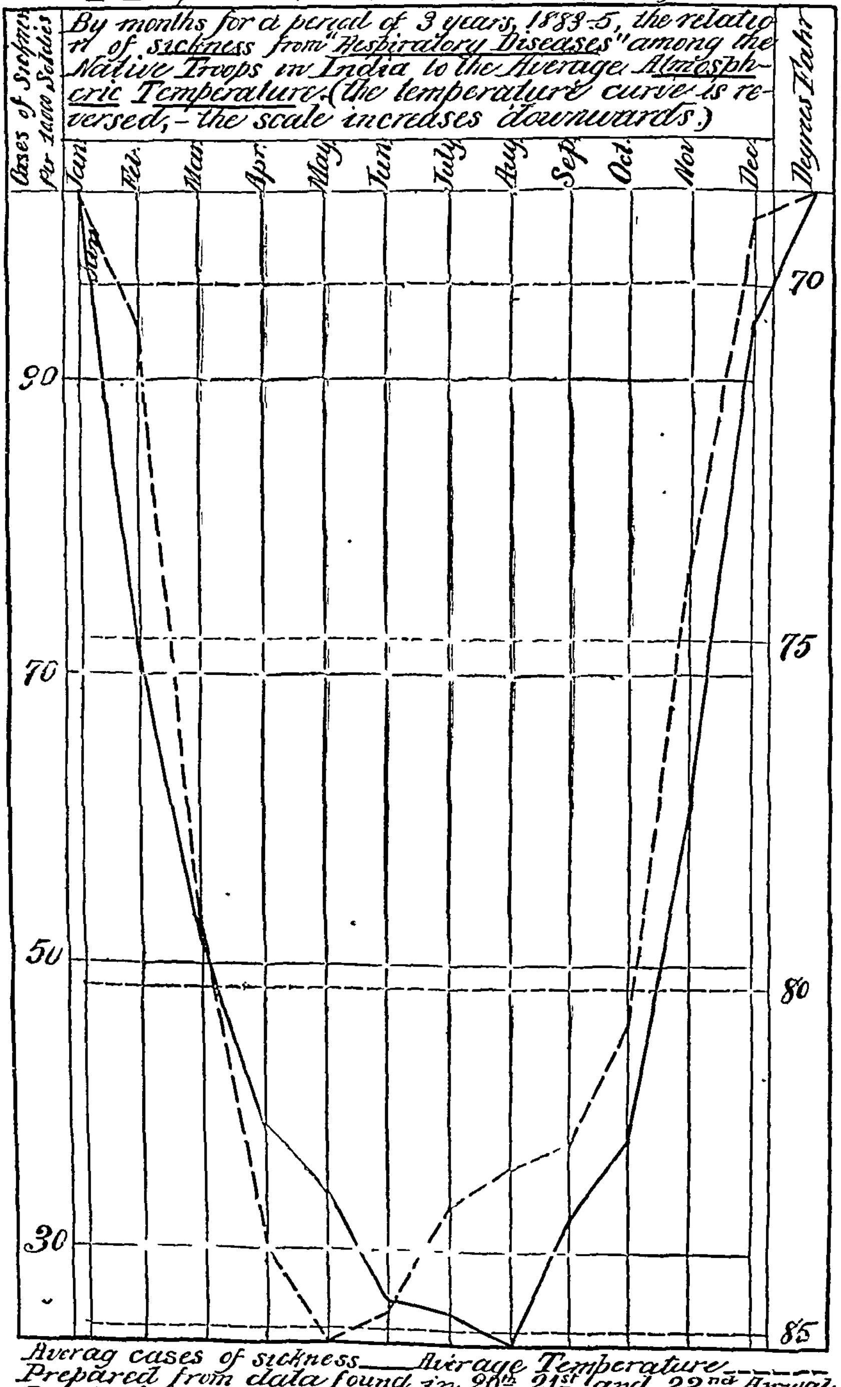
Thirty Years, 1845–1874.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Av. weekly number of deaths	23 00	24.00	21.60	23.75	24.50	22.40	18.00	14.25	13 00	13.00	14.50	18.20
Av. temperature, degrees Fahr	38.6	40.1	42.2	48.6	52.7	60.0	64.2	63.5	59.1	52.2	44.2	40 5

No 13 Temperature, and Sickness from Croup in Michigan



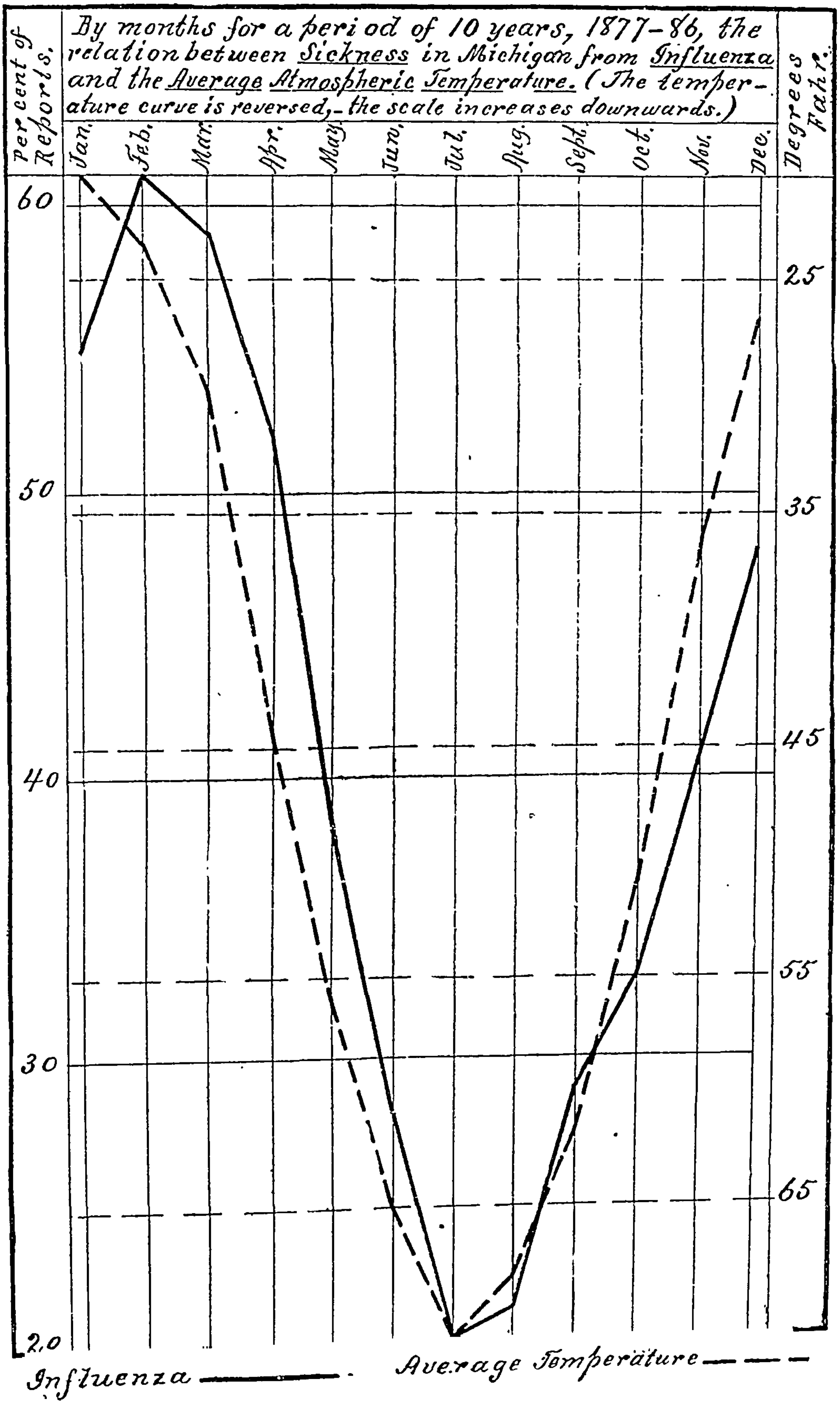
By month for a period of 10 years, 1877-86, the relation between Sickness in Michigan from Membranous Croup and the Average Atmospheric Temperature. (The temperature curve is reversed;–the scale increases downwards)

No 14 Temperature and Sickness from "Respiratory Diseases" in India

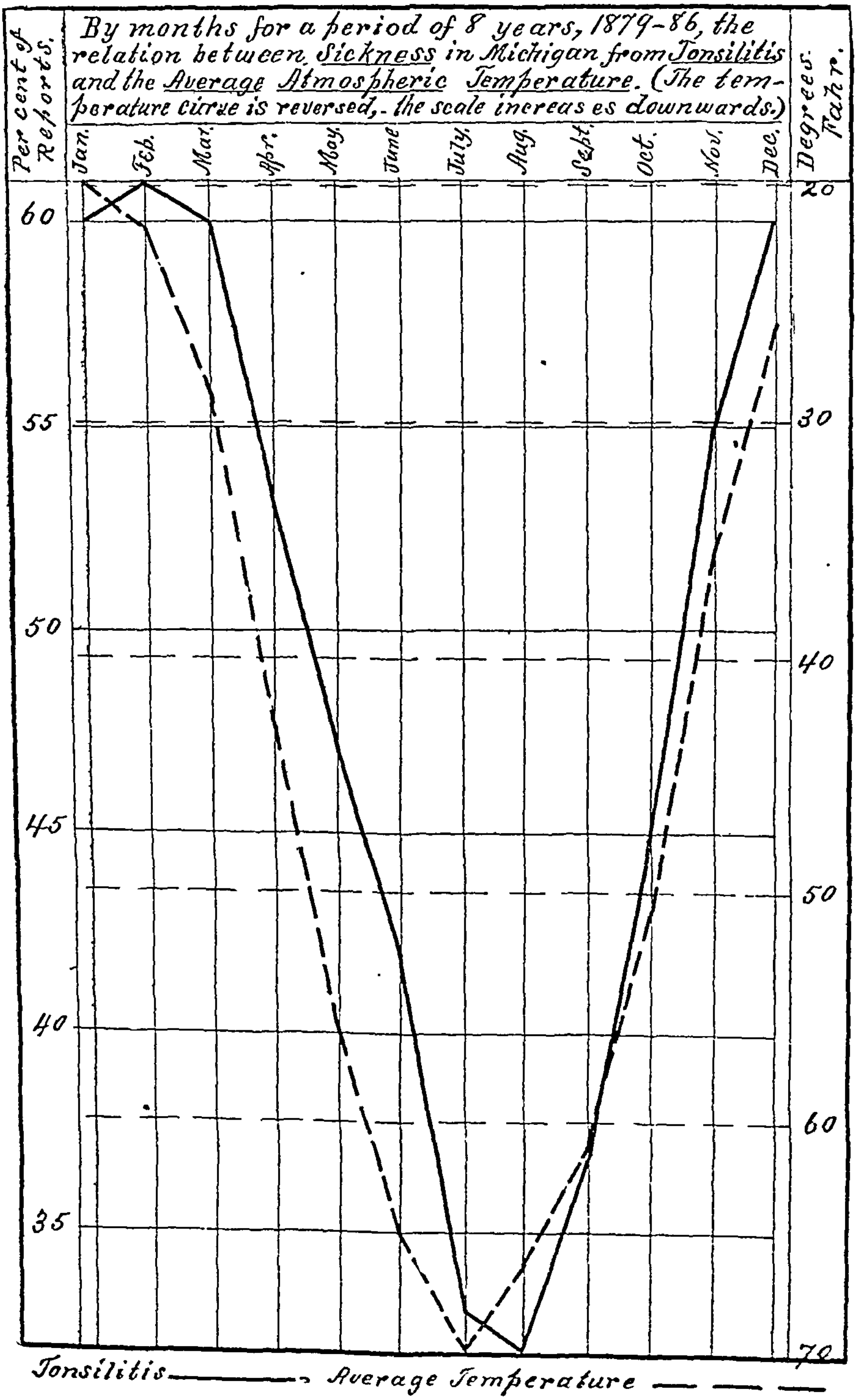


Prepared from data found in 20th 21st and 22nd Annual Reports of the Sanitary Commissioner with the Government of India.

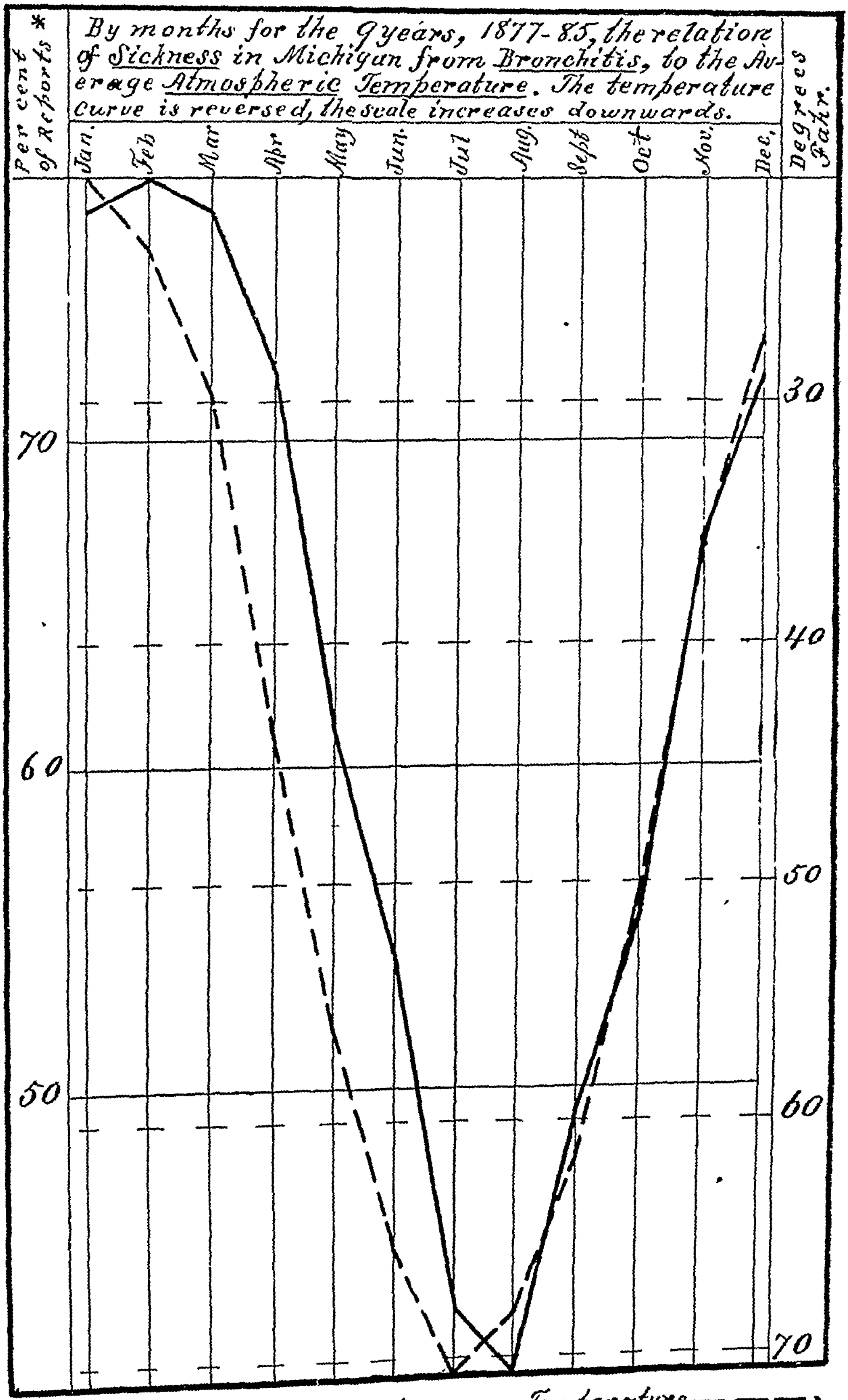
NO. 15.—TEMPERATURE AND SICKNESS FROM INFLUENZA IN MICHIGAN.



NO. 16.—TEMPERATURE AND SICKNESS FROM TONSILITIS IN MICHIGAN.



NO. 17.—TEMPERATURE AND SICKNESS FROM BRONCHITIS IN MICHIGAN.

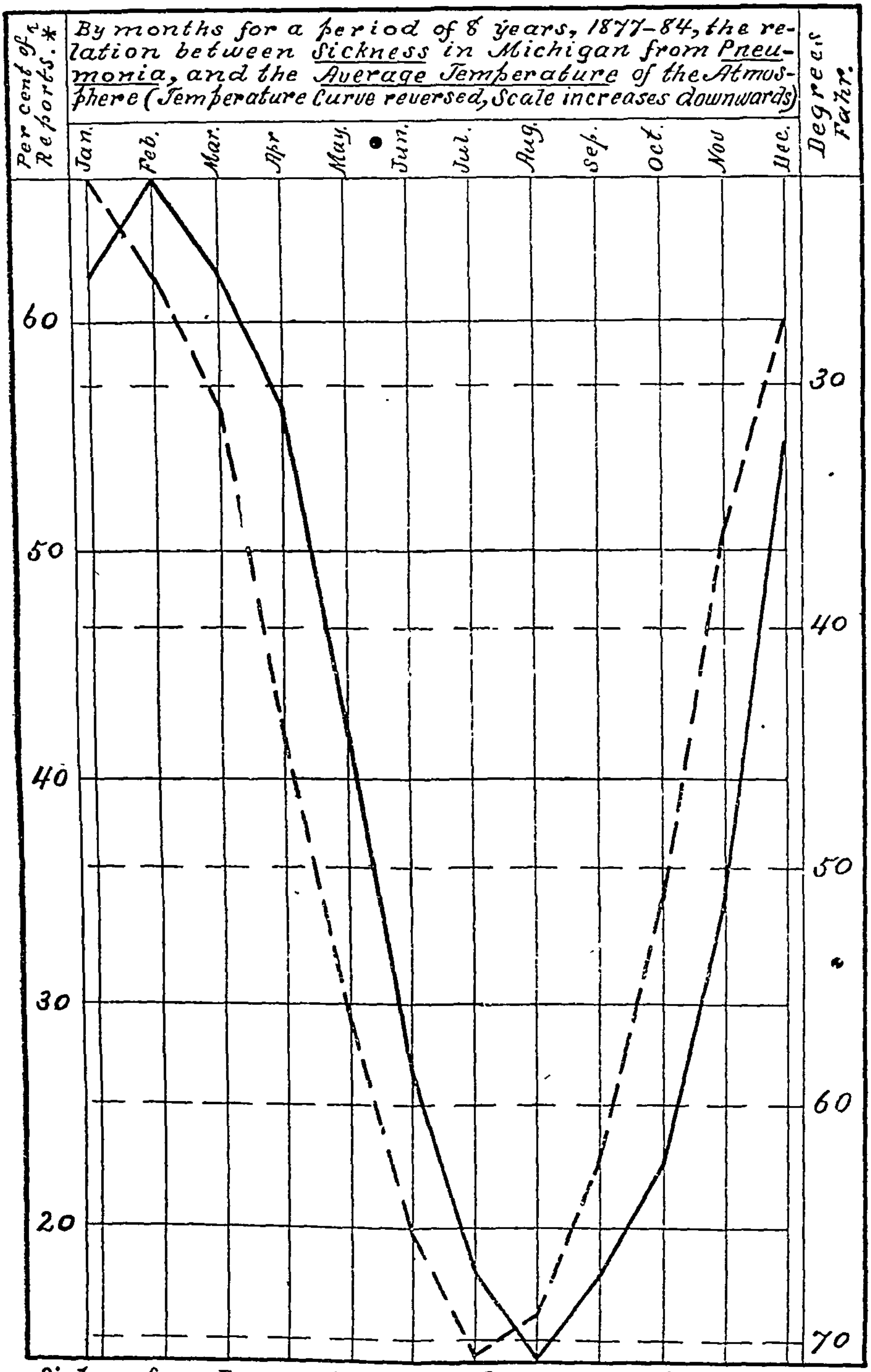


Bronchitis ————. Average Temperature — — —.

* Indicating what per cent of all reports received, stated the presence of Bronchitis then under the observation of the physicians reporting.

Over 35,000 weekly reports of sickness, and about 173,000 observations of the atmospheric temperature are represented in this diagram.

NO. 18.—TEMPERATURE AND SICKNESS FROM PNEUMONIA IN MICHIGAN.

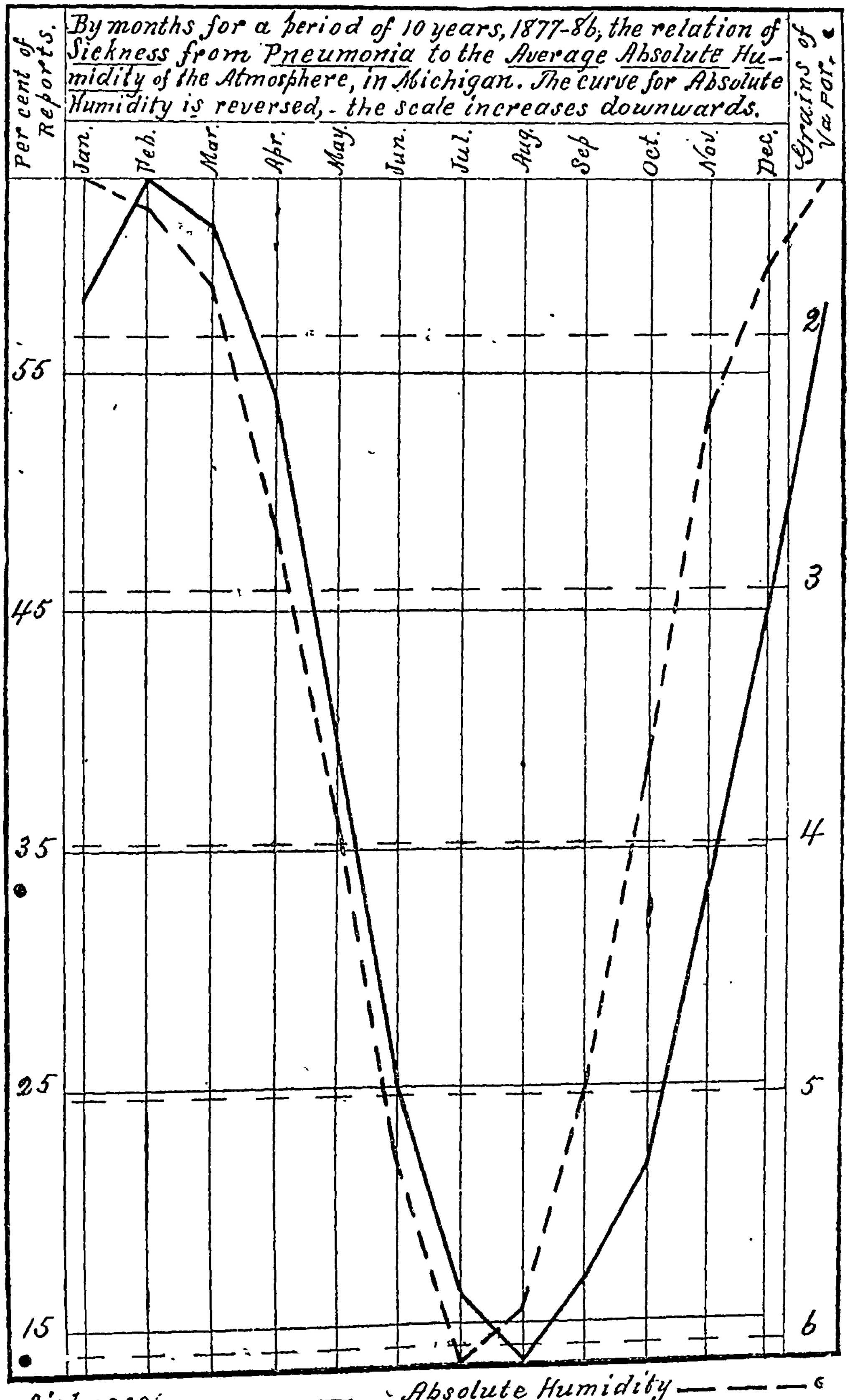


Sickness from Pneumonia ——. Average Temperature — —.

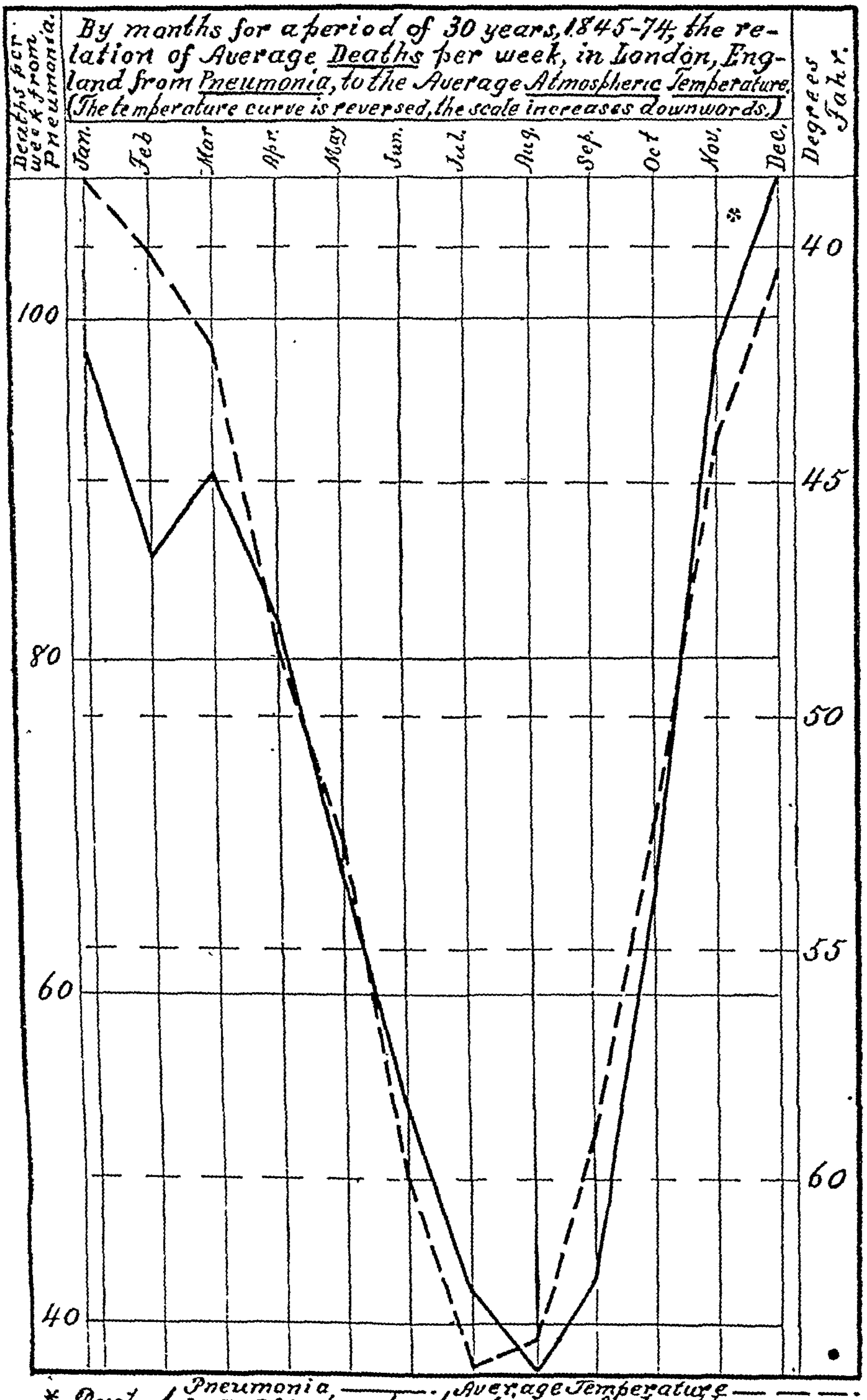
*Indicating what per cent of all reports received, stated the presence of pneumonia then under the observation of the physicians reporting.

• Over 30,000 weekly reports of sickness, and over 150,000 • observations of the atmospheric temperature are repreresented in this diagram.

NO. 19.—ABSOLUTE HUMIDITY, AND SICKNESS FROM PNEUMONIA IN MICHIGAN.

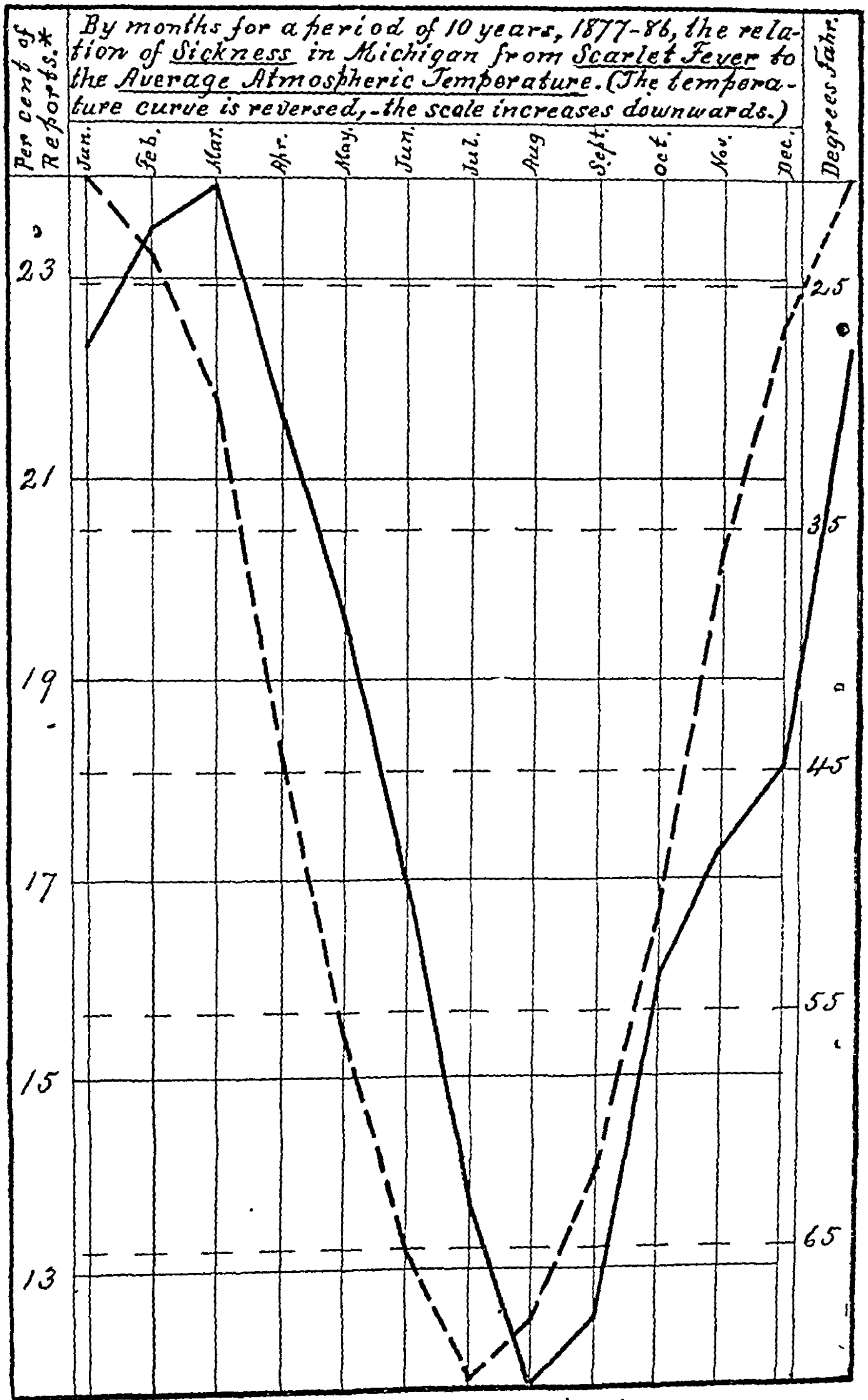


NO. 20.—TEMPERATURE AND DEATHS FROM PNEUMONIA IN LONDON.



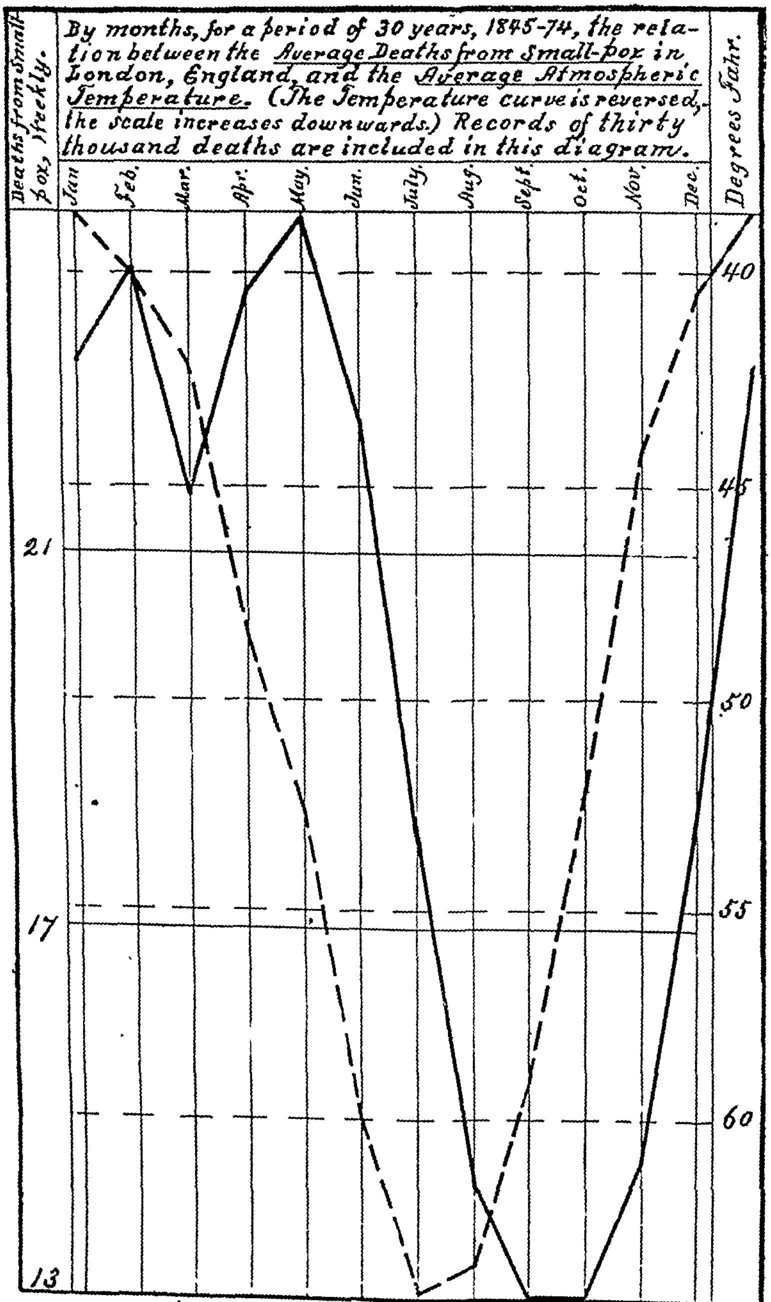
* Perhaps a greater proportion of deaths are returned for the later than for the earlier months in each year?

NO. 21.—TEMPERATURE AND SICKNESS FROM SCARLATINA IN MICHIGAN.



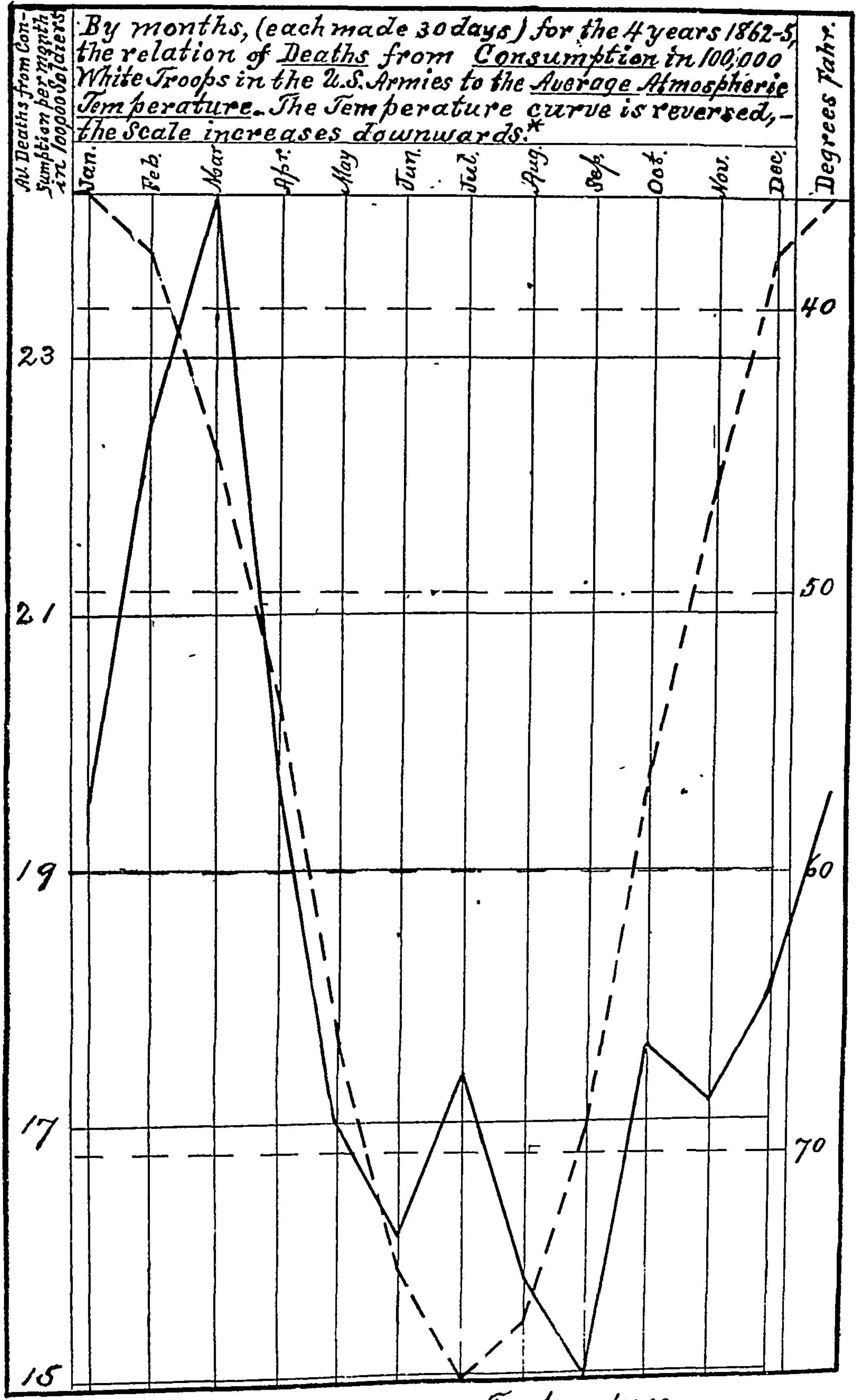
Scarlet Fever ————. Average Temperature — — —.
*Which stated that Scarlet Fever was under the observation of the physicians who made reports.
Over forty-one thousand weekly reports of sickness and over 190,000 observations of the atmospheric Temperature are represented in this diagram.

NO. 22.—TEMPERATURE AND DEATHS FROM SMALL-POX IN LONDON.



Small-pox ———. Average Temperature — — —.
Except in a few months the Small-pox follows two months later than the temperature changes.
The line representing Small-pox should follow as long a time later than a line representing its controlling condition as is the average duration of the fatal cases plus the period of incubation?

Diagram 23.–Deaths from Consumption in U.S. Armies, and Temperature.

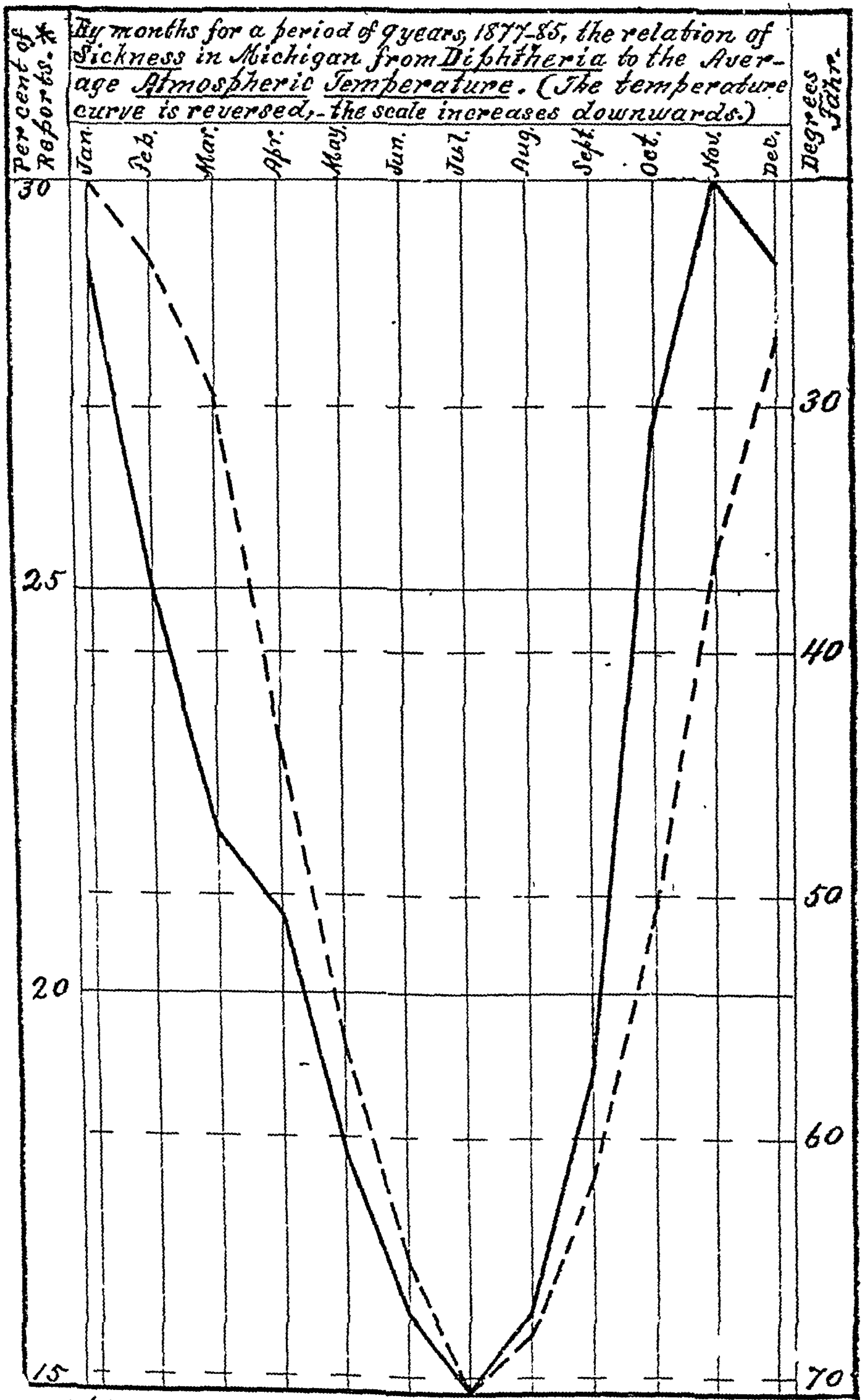


By months, (each made 30 days) for the 4 years 1862-5, the relation of Deaths from Consumption in 100,000 White Troops in the U.S. Armies to the Average Atmospheric Temperature.–The Temperature curve is reversed,–the Scale increases downwards.*

Deaths ————. Average Temperature — — —.

*The temperature curve is made from the normals at six Stations representing approximately the localities occupied by the armies of the United States in the war of the rebellion.

Diagram 24.—Sickness from Diphtheria, and Temperature in Michigan.



Diphtheria ———. Average Temperature — — —.

*Which stated that diphtheria was under the observation of the physicians who made reports.

MEDICAL PROGRESS.

Antipyrin and Thallin as Hæmostatics.—Dr. Moncorvo summarizes his views regarding the hæmostatic action of antipyrin and thallin as follows:

1. Antipyrin and thallin should be considered as hæmostatics whose efficacy surpasses that of their cogeners in so far as relates to their direct action upon the hæmorrhagic focus.
2. This hæmostatic property has been proved by experimentation upon animals and by clinical experience.
3. Acetanelid and phenacetin do not appear to possess much hæmostatic power.
4. The hæmostasis produced by antipyrin and thallin seems to be explained by the constriction which they produce in the vessels as well as by the coagulation of the blood which is hastened by their action.
5. This interpretation, however, is at present only a hypothesis which needs additional support from experimentation.—*Jour. de Méd. de Paris.*

Influence of Menstruation Upon Lactation.—Schlichter, of Vienna, has made a study of the alterations which take place in the milk of nurses under the influence of menstruation and the development of children during such menstruation. He finds that the milk of nurses who do not menstruate contains four times as much fat in the evening as in the morning, notwithstanding which the nurselings continue to thrive. The milk of menstruating women presents no appreciable alterations; caseine is found in the same proportions as in non-menstruating women; the same is true of fat, and the sugar, which has been considered as the cause of diarrhœa, is not increased. The differences between the milk of menstruating women and that of non-menstruating women are less than those which exist in non-menstruating women between the composition of the morning and the evening milk. Schlichter affirms that when menstruation appears in a nurse more than six weeks after confinement, it has no influence upon the milk or upon the child. If it appears before the sixth week it may, like any other hemorrhage, exert a slight influence upon the milk secretion. The dyspepsias and diarrhœas, then, which occur in children nursed by menstruating women should be regarded as accidental and as not requiring a change of nurse.

In this connection Exner remarks that mammals suckle their young without inconvenience during rut and even up to the end of gestation. Eisenschitz and Teleky oppose Schlichter's observations and analysis with the general experience of the profession to the effect that the milk under the influence of menstruation undergoes qualitative and quantitative alterations which exert a manifest effect upon the nurselings.—*La Sem. Méd.*, Vienna Cor.

Chloral in Eclampsia.—Dr. E. Blanc finds the chloral treatment of eclampsia to be the most reliable, although considered by some as merely a symptomatic remedy. Blanc has satisfied himself that chloral exercises a favorable action upon the inflamed and obstructed parenchyma of the kidneys.

The intravenous and hypodermic administration of chloral have been abandoned as dangerous, and it remains to consider the relative merits of administration by the rectum and stomach. If the woman is in a comatose condition it is of course impossible for her to swallow, and accordingly the rectal method is generally preferred, the chloral being emulsified by means of milk and the yolk of eggs. Inasmuch as the enemata are usually expelled, Blanc prefers the method of Prof. Fochier, whereby an œsophageal tube is introduced into the stomach and the chloral injected. If it is impossible to open the mouth, the tube may be passed through the nasal fossæ. The chloral solution should be made in the strength oz 1-30 or 1-40. The dose should not exceed 3 or 4 grm. In this manner 10 or 12 grm. of chloral may be administered in twenty-four hours. As the remedy appears to have a pathogenic action, it is well to give 3 or 4 grm. per day in severe albuminuria of pregnancy. Its administration should be continued after the disappearance of the crisis for the purpose of eliminating toxic matters from the blood.—*Jour. de Méd. de Paris.*

Acute Pancreatitis.—Langerhans reports to the Berlin Medical Society the case of a patient who presented some of the symptoms of typhoid fever and who died in coma. At the autopsy the pancreas was found to be completely mortified. This mortification he believed to be the result of an acute pancreatitis, an affection which habitually terminates in a few days. In the present case it lasted more than eight weeks. Characteristic symptoms of this affection are the sudden appearance of the disease in young and vigorous subjects, bilious vomiting, headache, vertigo, distention of the belly, etc. In the case reported there was no sugar in the urine.

At the same meeting Hausemann reported three autopsies of patients who died of this disease; in none of them had sugar appeared in the urine. Ewald reported autopsies in two cases of total destruction of the pancreas by carcinoma, in neither of which did diabetes appear.—*La Sem. Méd.*

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SATURDAY, FEBRUARY 1, 1890.

THE PRESENT STATUS OF MEDICAL LEGISLATION IN THE UNITED STATES.

The old-time agitation of the question of medical education has not subsided into insignificance, because that of medical legislation has in recent years come more directly to the front. The two subjects have become intertwined, and have thus created renewed and continued public interest in each other. Judicious measures of legislation restrictive of medical practice assuredly suggest inquiry into the necessity and advisability of the possession of the highest qualification in the practitioner; while the medical schools are likely to vie with each other in the elevation of the requirements for education in their pupils, who in the near future may be compelled by legislative enactment to undergo a competitive examination before a perfectly disinterested State Board of Examiners, who will impartially decide as to their competency.

Apart from the important desideratum that the status of medical education should be as nearly uniform as possible throughout the country, and that medical legislation should share the same general character of similarity wherever local, geographical or other causes do not operate to prohibit it, it is well occasionally to glance at the actual condition of the various States of the Union as to existing laws enacted for the regulation of the practice of medicine and the annihilation of quackery. It is well to remember in this connection a fact that is too often forgotten, that these laws are intended for the protection of the public and are not prepared or supposed to be executed in the interest of the profession. With this spirit earnestly impressed upon the mind of the laity, opposition to these enactments would soon be dissipated, and a clear open course be left for the passage of laws protective of the community.

The year 1890 opened with a cheerful retrospective view of what has been creditably accomplished in this direction during the previous year, and a satisfactory indication from a number of States that the work hitherto effected will, at as early a date as possible, be amended or carried still further forward in the path of progress. At this moment restrictive legislation is in force in at least three-fourths of the States of this country. In some, as in Pennsylvania, this amounts to registration simply; in other States, Medical Examiners exert their judicial functions in plenary power, while in others again candidates for practice may be admitted, without direct personal examination, on the *ipse dixit* of a State Board of Health, as in South Carolina, although in this State, as in some others, personal and direct examinations are the rule and not the exception.

Geographical lines do not produce uniformity as to legislation; States adjacent in their boundaries and supposed to be influenced by similar commercial interests have entertained very different ideas as to the necessities of legislation for the protection of their various communities. Pennsylvania, New York and New Jersey are not so dissimilarly situated in this respect, that three such different laws should have been enacted for the suppression of quackery and professional ignorance. Still, in some States, such as Pennsylvania, it was absolutely essential, in order to accomplish anything at all, that the imperfect law now in force should be accepted as a stepping-stone to something better hereafter, when the tide of public sentiment shall have toned up to the exigencies and advanced spirit of the times, and the good that is in the law shall have exercised its convincing sway over the minds of even the veriest quibbler and opponent.

In a general way, it may be said that the action of the American Medical Association, at its last annual meeting, looking to uniformity of legislative enactments, will have a good effect in each State to awaken interest in the subject and to strengthen the hands of those who are earnestly struggling either to obtain a law or to amend and improve what was already in force. So, too, the action of the New York Legislature in requiring of medical students a certain standard of preliminary education, may be regarded as an additional protection to the public, which had not been covered by the provisions of the law already in operation in that State.

Here and there official nearsightedness interferes with the passage of efficient State laws regulating practice, as in Maine, where the Governor first signed the bill and then erased his signature, and the Court decided, after quite a contest, that the erasure was legal—or in New Hampshire, where a decision was rendered by the Supreme Court, *in banc*, that it is not constitutional to demand of an intending practitioner a license as a prerequisite for such an occupation. Maine and New Hampshire are therefore, although first in the enumeration of the States, practically at the extreme end of the scale in the protection of the public by restrictive and retributive justice against empiricism and quackery.

We are thus reminded that Kentucky's enactment of 1874, amended in 1888, is entitled the "Empiricism Law," basing its name on its chief object, the suppression of illegal and strictly unrecognizable practice; this being accomplished by the requirement that medical college graduates shall alone be allowed to practice, except those physicians only who have had a certain number of years in practice, and by the usual stipulation as to the necessity of registration that exists in other States which have not risen from the lower plane of weak legislation to the higher sphere of a forcible and effective restrictive policy. Tennessee, its near neighbor, had nothing, in the way of a law, until last summer, and now, with its Board of Medical Examiners and its other provisions for an active contest with quackery, will soon, doubtless, succeed as Kentucky has already done, in driving irregulars and incompetents into other States. And this will doubtless be the stimulus that will eventually improve in this respect the moral tone of every community, the sense of self-protection against invasion when quacks and empirics are forced to seek shelter away from the *vis a tergo* that is perpetually urging them towards emigration.

North Carolina is happy in the possession of a Board of Medical Examiners, before whom regularly credited graduates of medical schools too often exhibit their incapacity as medical practitioners. Virginia is equally felicitous in its expressions of satisfaction with its Board, which on one occasion at least rejected 70 per cent. of the candidates for license to practice medicine that appeared before it. A good thing for the cause of education is the publication by this Board of the questions and answers, of course anonymously, through which the rejected candidates have freely ventilated their profound ignorance and unfitness for professional work.[*]

Florida, too, has a new law, in which Medical Examiners for each Judicial District of the State are appointed, in addition to a general Board of Homœopathic Medical Examiners for the State at large; but singularly enough, the District Examiners must be graduates of some medical college recognized by the American Medical Association, which has nothing whatever to do with medical colleges, recognizing in its organization and membership medical societies only.

Minnesota, too, has a State Board, which impartially rejects incompetent candidates, and is itself already sensible of the beneficial effect it has had upon the community. An unusual proviso is made in the law of this State, requiring evidence that three courses of lectures, of at least six months each, have been taken by the applicant for the license to practice. While referring to unusual provisions in such laws, the case of Wisconsin may be cited, which, although practically without any restrictive law, allows only graduates in medicine, or those connected with organized medical societies, to testify in court or collect fees by law. Alabama seems particularly happy in the provisions of its law, one of the gentlemen most actively concerned in its execution regarding it as "ideally perfect." Certainly the whole State, well organized as a profession, through its numerous County Boards, seems aroused to a sense of the necessity of self-exertion for the enforcement of the law. And yet Arkansas, from the very fact that it has so many County Examining Boards is unhappy because these Boards, being appointed by the County Judges, are often thoroughly unfit to perform their duties, never having themselves received any education in a medical college.

Such are some of the features of interest in connection with the existence of County Boards as part of the machinery for the execution of the law. It is not necessary to specify all the other conditions that are in effect in the other States of the Union. Most of these, as in Illinois and West Virginia, have been operative for so many years that their practical working has become familiar to almost all medical men who keep themselves informed as to the progress made by and through the profession for the good of the public and its permanent protection. Few States are likely to have so much power invested in their State Boards of Health by such confiding Legislatures, even though experience has shown them to be so absolutely worthy of the faith that has been reposed in them.

The present status of medical legislation may, on the whole, be regarded as satisfactory, indicating a healthier condition of public sentiment, a material decrease in the opposition to new enactments, and greater unanimity in professional efforts. The wedge has been driven almost too gently in some States, but it seems probable that it will penetrate still more deeply into the corrupt mass of empiricism and quackery with the awakened public impulse which must guide the views of the Legislatures. Whether uniformity of legislation ever becomes a fixed fact in all the States of the Union, or not, there seems a fair promise that the time is not far distant when every State will recognize the policy of self-protection, by the enactment and enforcement of laws decisive in their character and rigid in their execution.

A NEW DOCTRINE ABOUT DRUNKENNESS AND RESPONSIBILITY.

Another ancient dogma bids fair to become obsolete; we mean the doctrine asserting the responsibility of the drunken person for the criminal acts done in the condition of drunkenness. It was at least as early as the time of Chief Justice Coke that the legal dictum regarding the double guilt of the inebriate criminal was formulated, to the effect that inebriety always aggravates the offense, and that the penalty should be increased rather than diminished. This view has generally been entirely acceptable to the legal mind, until a recent date, since its tendency was eminently conservative of social and proprietary rights, and *pari passu*, entirely acceptable to the general public. But now-a-days there is a growing criticism of that theory, and eminent jurists in England and elsewhere have decided that a man may be convicted of an offense committed in drink, and yet be absolved from responsibility; in other words, the criticism has reference not so much to the expediency of the old doctrine,—that remains the same,—but the justice of the theory is challenged. For example, as reported in the *Lancet*, Baron Pollock has held that the plea of irresponsibility was tenable in a case where a homicide was committed by a person after taking a small quantity of alcoholic liquor—a quantity not sufficient ordinarily to disturb the reasoning faculties, but which, in the case in question, was sufficient to set in motion an insane predisposition that became the prime agent in the manslaughter. Another eminent judge in England has recently ruled, in regard to the case of a drunken mother, who through the neglect of her babe, occasioned its death by starvation the withholding of nourishment by the mother was not a crime for the reason that it was undesigned, and that it is not a declared crime to imbibe too much liquor.

Chief Baron Palles has ruled that neither law nor common sense can hold a man responsible for the acts done under the influence of an intoxicant, if by reason of long vigil, deprivation of sleep or impoverishment of the blood, he shall have become so reduced as to be made drunken with a smaller quantity of liquor than would have produced that effect upon him in good health. Justice Day has gone still further and has declared that a person, who does not know the nature and quality of the acts he commits, is not responsible for them, whatever may be the cause of his unconciousness.

The thought contained in these decisions is a complete reversal of the ground of decisions that have been respected for three hundred years by the general public, that have been on a thousand grave occasions accepted by the criminals themselves without a whisper of dissent and that have passed almost unquestioned by jurists until within the present decade. A recent judicial charge may be quoted to show the tenor that has prevailed in regard to the plea of irresponsibility: "No insanity or irresponsibility can be predicated in any given case, unless the mind showed a continuance of delirium or delusion, and that in no case should this be taken into account in mitigation of guilt, if it resulted from alcoholic intoxication." The ground of precedent as ordinarily assumed by the state's attorney, whose business it is to bring to punishment as many criminals as possible; is commonly based on old English decisions that intoxication is never an excuse for crime and that "no man can plead that he should be exempt from the law by reason of not knowing or not being able to control the extent and force of his acts, by reason of being drunk, and that drunkenness is a voluntary insanity, and those who use alcohol to that degree know full well the consequences of that act." These are the extremes of the question as to how far inebriety may coexist with irresponsibility. It is only of late years that there has been enough of practical psychology known by physicians to enable them to grapple with this problem. And still fewer have had that assurance of their convictions to support them against an intrenched and popular doctrine that has ruled the courts for three centuries. The Congress of Psychology, held at Paris during August, 1889, as reported in the *Press and Circular*, considered this subject and took formal action thereto, according to which it is proposed that the government should be called upon to take steps to more thoroughly protect society against criminal dipsomaniacs, and for that purpose to establish special asylums for the treatment of hibitual drunkenness, this proposition was adopted by the assembly unanimously.

EDITORIAL NOTES.

HOME.

THE ROOSEVELT HOSPITAL, NEW YORK.—The Syms Operating Theatre of the Roosevelt Hospital has been commenced. It will occupy a space of 90 by 75 feet and will cost from $150,000 to $175,000. The balance, then remaining from the bequest of $350,000, will be invested as an endowment fund.

DR. JOSEPH Y. PORTER, who recently resigned from the Army, has applied, by means of a bill in the Senate, for permission to be placed upon the retired list of Army surgeons. The important services of Dr. Porter during the yellow fever epidemic of 1888 are not likely to be soon forgotten.

PRIZE ESSAY ON EPILEPSY.—Dr. H. A. Hare, of Philadelphia, has taken another prize. This time it is for the best essay on epilepsy, and its value is 4,000 francs. It was awarded by the Royal Academy of Medicine of Belgium. Although Dr. Hare is the editor of the *Medical News* this item of news comes to us through another channel. He with Dr. Martin, also of Philadelphia, took two valuable prizes last summer with the same essay; one of these they declined.

FOREIGN.

SIR WILLIAM SCOVELL SAVORY.—A baronetcy was given by the Queen, on New Year's day, to the eminent surgeon, Mr. Savory, of London. Until recently he was the President of the Royal College of Surgeons, refusing a reëlection.

PROPOSED FIVE YEARS' COURSE OF MEDICAL STUDY IN GREAT BRITAIN.—The General Medical Council is seriously considering the propriety of compelling a five years' course of medical study as a requisite to registration and practice in Great Britain. The question will be up for discussion at the next meeting in May. The Royal College of Physicians will probably oppose the scheme, for the present, a preliminary vote having been taken by its Council which declares that it does not see its way to recommend the adoption of the increased term of study.

UNIVERSITY OF BERLIN.—Dr. Hans Virchow, son of Professor Rudolph Virchow, has been appointed to a professorship of Anatomy in the University of Berlin. Dr. Fritz Bramann, who tracheotomized the late Emperor Frederick in February, 1888, has been made extraordinary professor of surgery. He graduated in 1880 and has been Bergmann's assistant since 1887. He has recently declined a surgical chair at Greifswald.

COMPULSORY TREATMENT OF INEBRIATES.—Dr. Gairdner, of Glasgow, has lately delivered an address to the Midland Medical Society, in Birmingham, on "Drunkenness and Dipsomania: Medical and Legal Preventives and Remedies." He strongly supported more stringent measures for the compulsory detention of habitual drunkards, and on the same lines as those for the treatment of the insane. No medical practitioner can fail to see the absurdity of making the detention of habitual drunkards turn on their own consent.

DR. ROBERT KOCH, of Berlin, is reported to be still busily engaged in his work upon the bacteriology of the tubercle bacillus.

TOPICS OF THE WEEK.

THE EPIDEMIC OF INFLUENZA.

The following facts with reference to the origin and development of the present epidemic in Europe, as outlined in the *British Medical Journal* of January 4, will be of interest to American readers. The following notes contain a sketch, founded on the most reliable published information at present available, of the progress of the existing great epidemic:

The first cases recognized in Europe were observed in St. Petersburg about October 15, and by November 12 it seems to have spread over nearly the whole of European Russia, for we find it reported from such widely different points as Riga and Pskov, in the Baltic provinces; Wilna, on the confines of Poland; Kaluga and Moscow, in Central Russia; and Sebastopol, on the Black Sea. The number of cases in St. Petersburg alone has clearly been enormous, even if some hesitation is felt in accepting Dr. Butz's estimate of 650,000, or nearly three-fourths of the total estimated population. At present the information from Russia in Asia is too meagre to permit of the formation of a definite opinion as to whether the disease traveled from Siberia to St. Petersburg, or *vice versa.* Indeed, so far as is yet known, neither hypothesis can be maintained, for the epidemic was first noticed in Tomsk, an important commercial town of Central Siberia—separated by nearly 2,000 miles from St. Petersburg—about October 15; that is to say, at the very time when the epidemic was beginning to develop with rapidity in St. Petersburg. It appeared in the Caucasus about November 11, while at Merv, 500 miles to the east, it was so bad towards the end of December that 35 per cent. of the garrison were reported to be laid up. At this date the epidemic was decreasing in St. Petersburg, and even in Berlin.

According to the statement recently made by Professor Leyden, influenza broke out in Berlin towards the end of November, and spread very rapidly. It prevailed very severely during the middle period of that month, and Professor Leyden estimated that a third of the inhabitants of the city were suffering from it. It began to decline by December 25. Meanwhile it had spread rapidly in central and southern Germany, and was on December 18 present in nearly every important town from Hamburg in the north to Munich in the south. It was severely felt at Frankfort, and in Mainz the tramway service was partially suspended, owing to the large number of men on the sick list. It was present in Dresden on December 23, and had got as far south as Prague on December 27, on which day over 100 cases were reported there. Already, however, it had reached Vienna, and although the existence of an epidemic was denied on December 11, it appears to have been practically admitted on the following day; it was present in Belgrade on December 16, and at Bucharest and Sophia on December 24.

Meanwhile the epidemic had also extended westward, making its appearance in Brussels about December 12, and in Antwerp about December 16. During the following fortnight it spread extensively in these two cities, rendering it necessary to close the schools, and seriously affecting the garrisons. It had already appeared in Amsterdam, in which city it began to decline about December 24, making its appearance, however, about this time in other Dutch cities.

In Copenhagen, also, the epidemic appears to have begun early in December, and to have attained considerable proportions; the number of cases notified in the week ending December 21 was over 6,000. It has since declined, the number notified in the week ending December 28 being about 3,000.

Cases are stated to have been observed in Paris as early as November 17, but the disease first began to assume epidemic proportions about November 26, when a large number of persons employed in the Magasins du Louvre (the "Universal Provider" of Paris) were attacked; the number of cases in this shop rapidly increased, until it reached 670 on December 10. The epidemic does not appear to have prevailed to any serious extent in the French provincial towns, but so large a number of cases occurred at Monte Carlo as seriously to interfere with the engrossing occupation of gambling.

The epidemic was first heard of south of the Pyrenees on December 12th, at Malaga. On December 14th there were a few cases in Madrid, one of the earliest reported being that of the boy-King. It rapidly spread, causing much sickness among the soldiers, and by December 29th most of the Spanish provinces had become affected. It appeared in Lisbon and Oporto about the end of the third or beginning of the fourth week in December, and prevailed very extensively in both cities.

In Italy the first cases were reported from Rome on December 13th. A few days later its presence in Verona was officially admitted, but denied in Rome. It has prevailed extensively in Milan, Spezia and other towns, and a few cases were reported to have occurred in Turin and Gaeta on December 30th. The epidemic, however, does not appear to have taken any hold in Rome, and it is seriously doubted whether any true cases have occurred.

In this country the epidemic has not as yet attained serious proportions, and its presence has been questioned. A consideration of all the information at our disposal, however, leads to the conviction that there has been an epidemic prevalence of influenza in the west of London and in the western suburbs during the last ten days; it has, however, not spread with the rapidity observed in St. Petersburg, Berlin, Vienna and Paris. Its severity may be gauged by the statement of a correspondent practicing in Shepherd's Bush, who informs us that he had recently seen four or five new cases a day. There has certainly been no distinct epidemic of the disease in East London, but it is stated that an outbreak has occurred this week in Dr. Bernardo's homes. There is no doubt that influenza has prevailed very extensively among horses in this country. One firm of carters in London had over one hundred horses laid up at one time about a fortnight ago, and one of the railway companies a still larger number. The epizootic, though sufficiently extensive to raise the price of cartage, has not attained the proportions sometimes observed, and has not much interfered with the efficient management of the parcel traffic, which is so enormous at this period of the year.

Influenza began to become epidemic in the northern part of the United States about December 17th, when cases were reported in New York and Boston. It appears to have spread with considerable rapidity, so that a large number of persons in various parts of the United States had been attacked by December 27th.

Our Paris correspondent writes that M. Brouardel stated, during the discussion at the Academy of Medicine, that grippe is always characterized by the precursory symptoms of headache, nausea, prostration, symptoms which are not present in pulmonary catarrh, which has been described as grippe. According to M. Rochard the present epidemic is the same as that which appeared in 1837. Dengue fever, of which he has observed several cases in Senegal, is quite a different affection, and is confined to tropical countries. M. Colin was of the same opinion concerning the dengue fever. Grippe is independent of all human means of transmission, and travels through thickly populated centres as through uninhabited regions with the rapidity of light or electricity. This fact would distinguish it from dengue fever. M. Dujardin-Beaumetz considered that reserve should be made as to naming the present epidemic until the two affections have completed their evolution. Dengue fever is possibly the form influenza takes in warm climates. M. Bucquoy is attending a college in which grippe has appeared. All the patients complain of pain in the limbs, and especially in the knees; the latter is a symptom observed in dengue fever. The pillars of the fauces, and subsequently the soft palate, are very red, and a rash, which differs in hue and intensity, is almost invariably present. M. Bucquoy is not prepared to affirm that the affection is dengue fever, but he considers it a curious coincidence that this affection and grippe have appeared simultaneously. M. Roy de Méricourt, who has studied numerous cases of dengue fever at Reunion Island, is convinced that it is quite distinct from the present epidemic, and stated that it is always accompanied by a papulous eruption on the back of the limbs. The different varieties of grippe actually observed are due to the different temperament, age and sex of the patients. M. Olivier raised the question whether it would not be advisable to break up the schools and colleges in which grippe has appeared, but this idea was combated by MM. Brouardel and Bucquoy on the ground of the benign character of the affection and the facility of curing it. Complications are very rarely observed. M. Proust stated that at St. Petersburg the epidemic appeared to be disappearing. Dengue fever, which appeared in Constantinople last August, appears to be abating. It has presented all the characteristics of an infectious disease, spreading successively to all quarters of the town, and finally to the villages on the Bosphorus. It was usually found that the affection was transmitted by persons who had contracted it in an infected locality. Defective ventilation, overcrowding and a bad state of the drains were apparently favorable to its development. Linen was found to be an agent in the transmission of dengue fever. Dr. Schwartz observed isolated cases in different families which employed a washerwoman suffering from the affection.

Writing under a later date our correspondent adds: The epidemic of grippe assumes a more malignant character, and does not confer immunity by an attack; there are many instances of the same person being seized two or three times. The cephalalgic and muscular pains, which were at the onset of the epidemic the striking symptoms, are now combined with serious pulmonary trouble, bronchitis, pneumonia and broncho-pneumonia. Tuberculous conditions become aggravated, dangerous pneumonia and pleurisy set in, and in many instances cause death.

M. Potain's assertion that the spleen becomes enlarged is verified by a large number of Paris doctors. It is, therefore, more than probable that the grippe now reigning here is, as Dr. Pitain believes, an infectious illness. The daily mortality is 100 per day more than it was this time last year, which brings up the daily death rate to 300.

The War Minister and the Minister of Public Instruction have closed all the schools and *lycées* under their jurisdiction. In some of the French towns there are so many soldiers attacked with grippe that they are treated in the barracks, the hospitals being all overcrowded. The Paris *Assistance Publique* have set up temporary buildings and ambulance tents in the open spaces belonging to the Paris hospitals. The epidemic is so general that trade is injured; butchers and bakers in a pecuniary sense suffer considerably; entire loss of appetite habitually attends an attack of grippe, but those not attacked complain of want of appetite. Paris has seldom witnessed such a sad Christmas season; gaiety seems to have passed away from Paris life for a time; the season of *étrennes* is one of illness and convalescence—some recovering, others seized.

Our Vienna correspondent writes: A third part of the whole population of Vienna was, and is, suffering from influenza. In the majority of cases the disease had the nervous and catarrhal character; the gastric symptoms had been observed in a relatively small number of cases. In the vast majority of cases the epidemic ran a rapid and mild course; but, on the other hand, I have full authority to state that the influenza was the immediate cause of death in some patients in the General Hospital who were suffering from various conditions of the lungs, such as bronchitis, pleurisy, catarrhal pneumonia, etc. In some cases the influenza itself was the cause of the development of catarrhal pneumonia with a fatal issue. In general, the influenza had a deleterious influence on those patients who had already been weakened by other ailments. In one case in the General Hospital, influenza became complicated with encephalitis, and led to a fatal issue, as was proved by the *post-mortem* examination. The rumor that the epidemic had also given origin to typhoid fever is false. Great embarrassment has been produced by influenza in the obstetrical departments of the General Hospital, as the commencement of real puerperal fever can frequently hardly be distinguished from the prevailing epidemic. The duration of the affection is very short, from 24 to 36 hours, but relapses are the rule, and the affection then lasts 8 and 10 days, and even longer.

Besides the principal types of the affection there are some of peculiar character. In my own case nausea was the most distressing feature of the complaint. I fell ill quite suddenly with symptoms of fever and prostration and a sense of weariness in all the limbs; I had a temperature of 40° C. and severe headache. Owing to the pyrexia, I had also delirium, which made those attending me fear that the disease was typhoid fever. The illness came to an end in twenty-four hours, when I felt only weary and prostrate; but in a few days relapse occurred; the symptoms were, however, less severe than in the first attack. Antipyrin, brandy, and the application to the head of cold compresses of vinegar and water gave some relief.

Last week the number of applications for admission to the hospitals on account of influenza was exceedingly great. For many years the hospitals have not been so crowded as they are at present. On Sunday, December 22, about 70 men and 40 women, suffering from influenza, applied for admission into the General Hospital; out of these only 50 could be admitted, and the rest had to be sent away for want of beds. At ordinary times from 30 to 40 persons are at the most admitted into the General Hospital on Sundays. The same proportion prevailed in the other Viennese hospitals. Under these circumstances extraordinary measures had to be resorted to, and at the instance of the director of the General Hospital, Prof. Charles Böhm, and the Statthaltereirath, Dr. v. Karajau, as well as the directors of the two clinics of internal medicine, Profs. Nothnagel and Kahler, the so-called clinical "Reservezimmer" (reserve rooms) were placed at the disposal of the patients. On the evening of the same day all the clinics and wards for internal medicine were overcrowded. For urgent cases an affiliated branch of the General Hospital was placed at the disposal of the patients suffering from the epidemic. This institution, which is situated at Währing, a suburb of Vienna, is a small hospital, and contains only 110 beds; out of these seventy were occupied on the same day. The Wieden and Rudolphstiftung hospitals, which were also overcrowded, had the patients transported into the Kaiser Franz Joseph Spital, which, on other occasions is reserved for cases of small-pox, etc. Should these measures prove insufficient, emergency hospitals will have to be erected.

The epidemic has been very severe among the tramcar and postoffice employés; among the latter, those whose work exposed them much to the weather suffered most.

Among the pupils and teachers in the public schools influenza is so prevalent that the Christmas holidays have been prolonged. In the Imperial and Royal Opera, the performances had to be very frequently changed owing to the sudden illness of the singers. A considerable increase of the epidemic has taken place among the troops of the Vienna garrison, in the 21st Jägerbataillon. Almost all the officers and a great part of the troops have suffered from the disease; and the same is true of several other barracks in Vienna. The druggists are doing an enormous trade in antipyrin, quinine, phenactin, salicyl, etc. Medical men have frequently to make from forty to fifty visits a day. The Christmas holidays and the New Year's eve (*Sylvesterabend*), which is usually one of the merriest evenings in Vienna, have been comparatively melancholy. Prof. Nothnagel had the opportunity of making clinical observations of influenza on himself.

The epidemic seems to have reached its highest point in Vienna, but no exact statistics are yet forthcoming.

Numerous cases of influenza are announced from Lemburg, Cracow, Buda-Pesth, Temesvar, Klausenburg, etc.

THE EPIDEMIC IN NEW ENGLAND.

Simultaneously with the appearance of influenza in Europe, an epidemic of this disease has been raging in Boston and vicinity. Thousands of cases have been reported. The disease comes on like a severe cold, but with much greater prostration of the muscular forces, backache and insomnia; considerable fever generally attends it from the first. In some it takes the form of a severe cold in the head, with headache and eyeache; in others, bronchial symptoms predominate; in others muscular pains predominate, and the mucous membranes are almost immune; in all, there is loss of appetite, and more or less gastric disturbance.

While resembling malarial fever in being of atmospheric origin, and in its wide diffusion, as well as in its probable contagiousness, influenza, unlike malaria, has no clearly defined native haunts, no known telluric source. Everything leads logically to the conclusion that the causal agency must be referred to an atmosphere vitiated by a living organism which multiplies and propagates itself *ad infinitum*, which affects individuals without regard to age or constitution, smites them suddenly without any period of incubation, then disappears, after a period of from four to eight weeks of prevalence, and does not generally come again until after the lapse of several years.

Care as to diet, care as to work, care as to the hours of sleep, etc., are important in times of epidemic, if one would be fortified against the invasion of the unseen atmospheric foe. It would seem hardly needful to inculcate the necessity of wearing warm clothing, and avoiding the depressing influence of cold and especially damp cold, but physicians who would be counsellors in hygiene cannot too much insist on these matters.

Attention to the bowels, rest in bed, a bland diet, phenacetine or antipyrin for the pains, some expectorant for the cough, sulphonal or Dover's powder for the insomnia, quinine as a tonic, and the self-limitation of the process, result usually in a fair degree of comfort and convalescence with a diminished vigor in from three to six days. —*Boston Med. and Surg. Jour.*

THE September number of the *Aerztliches Vereinsblatt* (the organ of the German Medical Association) gives a list of the various medical societies which belong to the German Medical Association, together with the names of the officers and the number of members in each society. This list enumerates 219 societies, with 10,557 members.

PRACTICAL NOTES.

COCILLANA.

At the meeting of the New York Academy of Medicine, December 17, 1889, Dr. R. W. Wilcox read a paper upon Cocillana, of which the following abstract appears in the *Medical Record* of January 11: He said that his studies in apomorphia, the results of which had modified his treatment of acute bronchitis and given him a clearer idea of the characteristics which an expectorant should possess, had led him to seek further to find one which should be effectual in doses of longer interval and without the addition of the bromide, which was frequently objectionable. In May of this year there was placed in his hands a supply of the concentrated tincture of cocillana. The source of this drug was the bark of an undetermined species of guarea, which was discovered in Bolivia in 1886 by the eminent botanist, Prof. H. H. Rusby, of the College of Pharmacy, who first brought specimens to this city. The principal physiological action of the drug in its crude state (powdered bark) was the production of nausea and a desire to vomit, with metallic taste in the mouth within half an hour after its administration; this nausea being accompanied by an early discharge of mucus, and later by dryness of the throat. Its action, then, might be stated to consist of stimulation for some hours of the vessels and glands of the mucous surfaces, more especially of the respiratory tract with subsequent diminution of activity (sedation).

The dose of the concentrated tincture of the bark varied from one-half to two fluidrachms, given every two to eight hours. He believed, however, that the fluid extract, in doses of from five to twenty-five minims, at the above-mentioned intervals, would, on account of the avoidance of alcohol, be more satisfactory in acute, and, probably, in chronic diseases. Having made a comparison of the effects of the drug with those of apomorphia in acute bronchitis, he stated that the expectorant effect of cocillana was not the first stage of nausea, as was shown by the fact that an increase of appetite was usually observed even under the administration of full physiological doses, while the fulness of the pulse under them remained unchanged.

Useful in Chronic Dry Bronchitis.—Dr. Wilcox related a number of cases in which cocillana was used, and went on to say that it was probable that in subacute and chronic dry bronchitis we found the larger field for its employment. The facts that its expectorant effect was more sure than either apomorphia or ipecacuanha in liquefying bronchial mucus, that it increased the appetite, and that it acted to some extent as a laxative, perhaps by stimulation of the intestinal muciparous glands, all commended it to us. Further, expectoration was not so much influenced by warm diluent drinks as in the case of apomorphia, ipecacuanha, or carbonate of amonia, although cocillana itself would produce a slight perspiration. In chronic bronchitis with viscid expectoration it would render the sputum liquid somewhat more surely than ipecacuanha, and it had the further advantage of not causing nausea. At times, also, the formation of mucus seemed to be checked. On the other hand, in cases of senile bronchitis, particularly in cases of calcified costal cartilage, it might so markedly add to the bronchorrhœa that it became absolutely dangerous, and particularly because it was not a stimulant to the respiratory centre, like belladonna and strychnine. In these cases, then, it was useful only so far as it liquefied secretion.

Also in Chronic Pulmonary Disease.—Having related another series of cases, he said that in chronic pulmonary disease it could be seen that cocillana had almost its only use in liquefying secretion and relieving the acute exacerbations of associated chronic bronchitis. Under its use cough and expectoration diminished, and the night-sweats, inappetence and constipation were relieved, and in general it might be said to be preferable to ipecacuanha. Naturally, when cough was due to pleuritic exudation, or was laryngeal or pharyngeal, cocillana would fail, as would all the other expectorants. In the latter instances he doubted whether local applications of the drug would be effectual.

In conclusion he stated that he believed cocillana to be superior to apomorphia, except in cases of acute bronchitis, when taken within the first forty-eight hours. It was certainly preferable to ipecacuanha, in that it did not so readily cause nausea and metallic taste in the mouth, and, moreover, assisted regular movement of the bowels. It must yield to carbonate of ammonia in chronic senile bronchitis, although the heart-beat and pulse became stronger under its use; nor could it stimulate the respiratory centre like strychnia. It was immeasurably safer in any stage of acute bronchitis than pilocarpine, because it did not depress the heart's action. On the whole, he believed that it could fully replace ipecacuanha (which was now becoming expensive from exhaustion of the supply) in every sphere of action, and that in many cases it could be substituted with advantage for apomorphia, carbonate of amonia, strichnia, and other drugs, classed with more or less reason as expectorants.

LABORATORIES.

New York and Brooklyn have four well-equipped pathological and biological laboratories. The trouble now is to find workers in them. "The harvest is rich but the laborers are few."

SOCIETY PROCEEDINGS.

New York Academy of Medicine.

Section on Orthopædic Surgery.

Stated Meeting, November 15, 1889.

A. B. Judson, M.D., Chairman.

The paper of the evening, on

THE TREATMENT OF TALIPES EQUINO-VARUS BY CONTINUOUS LEVERAGE,

was read by **Dr. H. L. Taylor.** Viewed from behind, this deformity is a curve of the foot and leg, with its convexity directed outward. In order to exert continuous leverage a splint is applied to the inner or concave side of the curve, and then the deformity is reduced by drawing the foot and leg to the splint. By progressively bending the splint valgus may be produced. Leverage should thus be applied to overcome first the varus and afterwards the equinus, the heel cord being left until the plantar fasciæ have yielded. Tenotomy does not take the place of systematic mechanical treatment. Much disappointment has been caused by failure to realize that it is only an incident in the treatment of club-foot.

The appliance used by Dr. Taylor consists of a steel shank which is easily bent according to the requirements of the case, pivoted to a foot-piece composed of a sole plate and a side plate. It is worn inside the shoe; the shoe cannot hold the foot, as it has no certain grasp, and the foot slips and turns inside. The foot is to be held and gently forced into position by the properly applied pressure of straps and buckles, the sole being kept in contact with the sole plate by a three-tailed adhesive plaster applied to the leg, a piece of webbing being attached to the plaster and buckled to the heel of the apparatus. Moderate continuous stretching thus applied is irresistible, and is easily borne by the patient. During the prolonged after-treatment the patient goes about quite independently, the brace being completely concealed by the shoe and stocking.

Dr. V. P. Gibney had formerly corrected both the varus and equinus at once, but for some years past he had been in the habit of first converting the equino-varus into equino-valgus and then reducing the equinus, the after-treatment being conducted with a retentive apparatus. He preferred taking six months to reduce the deformity, which can be done in many cases without tenotomy; but a speedy method consists in giving an anæsthetic and molding the parts for ten or fifteen minutes, and then reducing the varus by manual force. A light plaster of Paris bandage holds the foot in equino-valgus for four weeks, and then the tendo Achilles is cut, and for ten days the foot is held in calcaneo-valgus. An apparatus is then applied and the parents are instructed in regard to the after-treatment. In those cases in which the bones are unmistakably distorted and elongated on one side and atrophied on the other, he had tried various methods, including excision, stretching, and gradual and rapid replacement, with good results.

Dr. N. M. Shaffer preferred to use an apparatus applied on the outer side of the foot, believing that if applied on the inner side it will have an improperly located centre of motion, as was demonstrated on the blackboard. Points of pressure, however, are made as in the apparatus described by Dr. Taylor, on the inner aspect of the heel and the inner and upper aspect of the tibia, while between these points of pressure there is inserted a centre of motion to the outer side of and below the external malleolus. The operator is thus enabled, by the use of the key, to exert a real traction force on the resisting lateral tissues, the heel being thrown downwards and outwards, after the straight line is reached, instead of upwards and outwards. He had not found it necessary to use adhesive plaster in this method of reducing the deformity. He favored the application of exaggerated force at very short intervals, if reduction can not be effected by constant pressure. As soon as this rigorous treatment has made it possible for the patient to properly apply the foot to the floor a walking shoe is applied, which makes use of the weight of the body as a means of overcoming muscular and ligamentous resistance.

Dr. R. H. Sayre said that the treatment of club-foot is simply a question of bringing the foot into a normal position and keeping it there while shortened tissues are gaining length and lengthened ones are contracting to their proper dimensions, If resistance is encountered, cutting the fibres is certainly preferable to tearing them by the exercise of great force. Whether or not a tissue can be stretched may be determined by putting the part on the greatest possible stretch and, while so stretched, making point pressure with the finger or pinching the part between the finger and the thumb. If a reflex spasm is obtained, this tissue will not stretch. Dr. Taylor has well said that tenotomy and osteotomy are only steps in the treatment, and the method to be adopted is to keep the foot in the normal position while it is growing. We may derive encouragement from the marked results of the Chinese in their persistent efforts to deform the foot.

Dr. Judson preferred a lever on the inner side of the foot, and used a single strip of adhesive plaster wound around the foot and buckled on the side of the foot-piece. In this way the ankle is drawn into the concavity, the foot is untwisted and the heel is held in contact with the foot-plate. In the new-born the deformity is to be reduced in the most convenient of a half dozen approved methods. This must be done gently and thoroughly by the time the child begins to walk. After that a light brace, worn for many years, should hold the foot on the right side of the dividing line between varus and valgus, so that every foot-fall of the growing child shall give an impulse toward the normal shape.

DR. RIDLON thought that orthopædic surgeons frequently failed to recognize the fact that the after-treatment in these cases is of the same duration whether the deformity be corrected in a few days by operative means, or only after many months or years by instrumental means. It is doubtful if it be justifiable to confine a patient for so long a period as is usually done when instrumental means are employed, simply to avoid an operation. Another objection to the mechanical treatment of these cases is that valuable time is lost during the period of growth, for a crooked foot grows crooked, and a straight foot straight. It would, therefore, seem desirable to correct the deformity at the earliest possible moment, in order to get the benefit of the growth in the corrected position, and in order, also, to get the correcting force of the superincumbent weight, as described by the last speaker. Congenital cases in very young children, which yield readily to stretching, may be treated in that way; and other cases, which can in a reasonable time be corrected by intermittent traction, would seem to be suitable cases for mechanical treatment; but the severe forms of club-foot should be subjected to more vigorous measures.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

La Grippe—Contagiousness of Tuberculosis—Professor Tarnier.

The present epidemic of influenza or la grippe has caused a great scare in Paris, not from its lethality but from the rapidity of its extension, affecting all classes of the population. It has even tried the wits of the doctors, who have been quite perplexed as to the real nature of the malady, some looking upon it as dengue, although in many respects they recognized the symptoms in it of an affection familiarly known to them as la grippe. The subject has even been discussed at the Academy of Medicine, and at a recent meeting Dr. Proust read a report on a work by Dr. Lebrun, of Bayreuth, on the epidemic of dengue which recently prevailed in the Levant, which, when compared with the present epidemic of Paris, will be found to be quite a different affection. Dengue is characterized by a sudden invasion, the fever at the commencement rises to 2° or 3°, the pulse is very rapid, the patient complains of cephalalgia, giddiness, severe pains at the back of the neck, in the joints and in the muscles generally, often there is nausea or vomiting, and rarely any cough. In a short time an erythematous eruption makes its appearance, recalling that of scarlet fever or measles. This eruption is followed by furfuraceous desquamation. The malady is of short duration, but the convalescence is prolonged. Dengue is epidemic and contagious, and is propagated from one village to another, not according to the distances which separate them, but according to the frequency and the facility of the communications which exist between them. It would appear that it may be propagated to animals. It has not been inoculated from man to man. Dr. Proust observes that there is nothing in symptoms attending the present epidemic which would permit one to affirm that the malady is dengue, and that grippe is sufficient to explain all the symptoms, even the polymorphous eruptions belong to grippe. Dr. Brouardel insisted on all that has been affirmed by Dr. Proust, adding that the epidemic is benign and identical in all the capital cities of Europe, and shows that the term grippe is the only one that suits this epidemic. All the great epidemics of grippe have presented the same characters as the present epidemic, and those who seem to find the symptoms of catarrh in every case of grippe are in error, as these symptoms are often found wanting. In the history of the epidemic of grippe of 1580, they were not even alluded to; on the contrary, gastric troubles, nervous phenomena, and polymorphous eruptions have been noted in all the great epidemics. Dr. Bouchard remarked that dengue is contagious, that it extends after the manner of maladies conveyed by man, and frequently, one may say who the person was that brought the malady to a village or to a house. With regard to grippe, there is nothing of the kind. The malady runs over great distances in one night; it affects 50,000 persons in a large city, which does not look as if there was any contagion in the matter. Such a mode of propagation is not explicable by infectious germs brought from a distance, which would have left traces *en route*. It is explained, on the contrary, by cosmic modifications extending at the same time over vast regions. It may be remarked that epidemics of grippe are always brought by the easterly wind. At the following meeting of the Academy Professor Germain Sée stated that the medical societies of St. Petersburg and of Berlin had also been occupied with the present epidemic. One point on which every one is agreed is that the reigning malady is grippe and not dengue. A second point on which every one is agreed is that whilst manifesting itself under different forms, the malady is one and should be considered a catarrhal fever. At St. Petersburg as at Berlin, at Berlin as at Paris, three principal forms have been observed: the first, nervous, with tendency to syncope, intense cephalalgia, sudden and high fever, of very short duration; the second catarrhal, with violent and convulsive cough, lasting from ten to twelve days; the third, gastric, with repeated vomiting, and the duration of which is longer than that of the nervous form, but is much shorter than that of the catarrhal form. M. Sée then insisted on the frequency of a complication of the catarrhal form, catarrhal pneumonia or fibrinous pneumonia, often very grave. He insists also on the state of debility which follows the gastric form. Whether the pneumonia of grippe is the ordinary or a special pneumonia, having a particular microbe, is a question that is being studied. It appears, however, to be established that the pneumonia now prevailing is infectious, if one may judge by the enlargement of the spleen which ordinarily accompanies it, as is met with in typhoid and marshy fevers. Dr. Dujardin-Beaumetz insisted on the special physiognomy of the present epidemic, which resembles nothing of what medical men have seen during the last thirty years. He does not believe that one can yet affirm that one has to deal only with grippe. Dr. Le Roy de Méricourt referred to the history of an epidemic of influenza which occurred in 1752, and of which the symptoms were exactly those of the present epidemic, in which there is nothing to be seen of dengue.

With reference to the debate on the contagiousness of tuberculosis between married couples, Dr. Leudet read a note in which he concludes that of families he had known personally and attended for the last twenty-five years, of 112 widowers and widows the companion of whom had succumbed to phthisis, seven only were affected with tuberculosis. He therefore affirms that contagion, even between married couples, is extremely rare.

Professor Tarnier has been elected Vice-President of the Academy of Medicine for the year 1890.

A. B.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Remedies for Typhoid Fever—Annual Meeting of New York County Medical Association—Meeting of Pathological Society—Death-Rate in New York.

While there was certainly very little that was new brought out in the discussion on the treatment of typhoid fever at the last meeting of the Academy of Medicine, the general opinion expressed was somewhat significant from the fact that very much less stress was laid upon the use of baths and other applications of cold than by Dr. Bausch, in the paper on "Hydrotherapy" which he read before the Academy in the autumn, and by several of the speakers who took part in the discussion of it.

The principal paper of the evening was by Prof. Wm. H. Thomson, of the University Medical School, whose deductions were mainly based on the typhoid cases which he had met with in his service at the Roosevelt Hospital during the past nine years. Having made some preliminary observations on the fallacies of hospital statistics, he gave the general typhoid statistics of the Roosevelt, and then stated that from 1881 to 1889, inclusive, he had treated 163 cases. Excluding eight cases which proved fatal within five days after admission, there were 155 cases, with a death-rate of 10.32 per cent. He gave an abstract of the histories of the patients which died, and then referred to the large number of relapses among his patients, amounting to 40, or 24.5 per cent. In the great majority of these there was no appreciable cause for the relapse, such as indiscretion in eating, etc. Intestinal hæmorrhage occurred in 4.9 per cent. of the cases.

In his management of typhoid fever, Dr. Thomson said, his special aims were, first, the treatment of the patient, and second, intestinal antisepsis. For many years he has acted on the theory that we have in this disease a reversion of the gastric fever to that of the new-born infant. He therefore never gives milk in its full strength, but always diluted one-half, or even to a larger extent, with lime water, which he considers an antiseptic of no little value. He would never think of giving beef-tea to a typhoid, believing it to be positively injurious under the existing conditions. In his opinion the rôle of gastro-intestinal fermentation in causing diarrhœa and spreading the intestinal lesions is a very important one. He said it was his common practice to give 10 grains of saccharated pepsin every three hours, and he often gives with it 10 minims of diluted muriatic acid. In addition to the pepsin he also gives subcarbonate of bismuth in the same doses and at the same intervals. During the past few years he has tried a number of the newer antiseptic agents, such as salol (which he gave to the extent of 40 grains a day), naphthaline, thymol, etc., but he has now returned to the use of pepsin and bismuth, as he believes them to be most reliable remedies for the purpose required. One result of this treatment he has found to be a great diminution of tympanites, and another, the prompt checking of diarrhœa; in fact his patients often became constipated.

In cases of prolonged convalescence with dry tongue he has found nitrate of silver very useful, and this agent is, in his opinion, the best remedy we have for chronic dysentery and chronic diarrhœa. In typhoid fever with dry tongue, as a rule he first gives oil of turpentine, and later nitrate of silver.

He does not regard high temperature as dangerous of itself; but when the other symptoms are also severe he thinks antipyretic remedies are called for. For the past nine years he has given up all medicinal antipyretics, for the reason that, being muscular depressants, they are apt to have a bad effect upon the heart. This, he believes, is not the case as regards the external application of cold. He formerly employed cold baths, but now commonly resorts to the use of the coil for the reduction of temperature. Such measures, however, are never called for, in his opinion, unless the temperature is at least 104, and even with this amount of fever are not required in all cases. In conclusion he said that if the disease had not lasted for more than a week he believed a purge of calomel and compound jalap powder was often very useful. Inunction twice daily with *linimentum aquæ coleis* was also of service.

Dr. T. E. Satterthwaite said that his experience with typhoid fever commenced in 1870, during the Franco-Prussian war, when he was in the medical service of the Prussian army, and that at this time he had ample opportunities for studying the disease, as there was a very serious epidemic of it among the men during 1870 and 1871. In this epidemic everything was tried—cold, large doses of quinine, free stimulation with all kinds of alcoholic drinks, etc. At first the results were not at all satisfactory, but later a plan of treatment was formulated which proved very successful.

The treatment was begun with small doses of calomel, and he believed this to be an excellent plan if nausea and vomiting, and possibly constipation, were present. It prepared the way for further measures. In the second week they began the use of what Dr. Thomson would call an intestinal antiseptic, viz.: muriatic acid. It was usually given in three-quarter drop doses, frequently repeated, and combined with infusion of ipicacuanha, which was called for by the bronchitis which prevailed. In the third week cinchona in some form was added, and in the fourth week the patient was usually given light wine freely. This was taken, in quantities of from one to two ounces, at regular intervals of four hours. Afterwards the alcohol was withdrawn, but the cinchona was still continued. The patient was still kept for a long time on liquid or semi-liquid food, and great care was otherwise taken to prevent relapses. Dr. Satterthwaite said he was not a believer that these relapses were ordinarily brought on by errors in diet, and that in his opinion they were due to a real recurrence of the disease.

On the whole, he continued, the great success of the treatment depended on the alimentation. The typhoid fever patient required large quantities of fluid, and milk diluted with lime water was probably the best article of diet as a rule. In the latter part of the epidemic referred to no cases at all were lost except those in which there was very severe diarrhœa or intestinal hæmorrhage when the patients were admitted to the hospital. In this disease he believed it was important *not to over-stimulate and not to over-medicate*. Neither should too much food be given, as he thought the patient would do better if kept a little under- rather than over-nourished.

As to antipyretics, the simplest, he thought, were the best; and the coal tar series of agents he believed to be dangerous, on account of their depressing action. High temperature, however, was not so dangerous as had been supposed by many. The great danger was from sepsis, and muriatic acid was a good antiseptic as well as antipyretic; while it was, moreover, a very safe remedy.

Dr. E. G. Janeway spoke of the difficulty of judging of the value of any treatment on account of the variation in the disease at different times and under different circumstances. He had had the opportunity of studying typhoid outbreaks in a number of institutions, and in some of them the fact that a large number of cases apparently aborted might have been taken by an inexperienced observer as evidence of the good effect of the treatment employed. Thus, in one outbreak at the Deaf and Dumb Asylum at New York, there were fifty cases, and of these only one-half ran a regular course. The others aborted, yet without special medication, and only two out of the fifty patients (or 4 per cent.) died; although no particular line of treatment was adopted. The abortive cases, he believed, were explained by the fact that typhoid fever, like some other febrile diseases, has a febricula. In this and other outbreaks which he had seen a large number of individuals were seized with all the characteristic symptoms of typhoid, but only a comparatively small number of the cases went on through the regular course of the disease. This undoubtedly showed a capacity in some persons to throw off the disease even when its evident symptoms had made their appearance.

In speaking of the treatment Dr. Janeway said he could see no objection to giving one or more doses of calomel, but he thought it extremely doubtful whether the disease then was ever really aborted by any such means. As regards the use of antipyretics of the newer class, he could only say that he had found them extremely serviceable. In his experience they rendered patients exceedingly comfortable with the least possible disturbance; while it was impossible to use baths without occasioning more or less disturbance. In some cases, however, this class of antipyretics did not have the desired effect, and in such instances (which were comparatively rare), it was necessary to resort to baths. He did not wish to be understood as claiming that antipyretics cured the disease; but he did believe that they had a most excellent effect in allaying nervous irritability.

When the heart's action was weak, the use of some cardiac stimulant was called for in connection with the antipyretic. In this connection he referred to an effect which he had lately noticed from strophanthus which would, as a rule, contraindicate this agent in typhoid fever, and this was the production of diarrhœa. In four cases this result was undoubtedly produced by the drug, although the particular article employed was obtained from the most reliable sources. He therefore thought it would be safer to resort to the older remedies, such as digitalis, caffeine, the ethers, and camphor. Camphor in some form, given in addition to such other remedies as were called for by the symptoms, he believed to be one of the most useful remedial agents that could be employed in typhoid fever. It not only strengthened the heart, but was also an excellent antipyretic.

As regards the matter of antisepsis, alcohol seemed to be of service, especially when ulceration was apparently occurring. If diarrhœa was present, he preferred brandy, and if the stomach was irritable, champagne; while if the patient was poor whisky was undoubtedly the best form in which to use it. The amount of alcohol to be employed must of course, be left to the judgment and experience of the physician.

In regard to relapses, he said in conclusion, their causation constituted a question about which we really knew very little. His own rule was never to allow the smallest quantity of solid food until fully ten days after complete defervescence—that is, until there is absolutely no rise of temperature either in the morning or evening. Yet even with this precaution he had seen some cases in which the relapse was apparently directly due to the diet taken. In other cases, however, the relapse seemed to be entirely independent of any such circumstance.

Dr. George L. Peabody said that it had never seemed to him that beef-tea was so poisonous or injurious to typhoid fever patients as Dr. Thomson represented. Well made beef-tea, he believed, on the other hand, was decidedly beneficial; both because it was a cardiac stimulant and because it was good for the appetite. The small amount of potassium salts which such articles of diet as beef-tea and mutton broth contained was unquestionably strengthening to the heart. As to milk, his rule was to let the patient drink it undiluted at first. Afterwards, he added a small amount of lime water; and if this was not well borne, he then resorted to peptonized milk. He said he was perhaps more bold or rash than others, but he often allowed solid food before the fever had wholly gone, and he did not believe that any harm could result from such a practice, provided the food was of a proper character and properly prepared. If a patient was really hungry in the latter part of the third week or during the fourth week, he did not hesitate to give a small portion of tender steak or chop very finely subdivided, and often, in addition to this, though at another time, half an egg or a whole egg. He was inclined to believe that relapses were in reality due to reinfection, and that they were much more frequently brought on by allowing the patient to get up too soon than by the too early use of solid food. After all, finely subdivided meat was likely to be digested in the stomach, if at some part of the day the temperature was normal.

In cases with dry tongue and meteorism he had been in the habit of giving 10 drops of turpentine five times a day. Lately, however, he had met with a case in which it appeared to produce acute nephritis; although after the remedy was discontinued all the renal symptoms disappeared. As to intestinal antiseptics, he had not been very favorably impressed with their efficiency.

With the new antipyretics his experience, like that of Dr. Janeway, had been very favorable. Even when given in the very large quantities in which they were recommended by the Germans when they were first introduced, he had not found them productive of harm, and in smaller doses, if given with proper care, they seemed quite free from deleterious effects. Five grains of antipyrin every hour often produced the most happy results. His favorite antipyretic treatment, however, was the use of cold. This remedy had stood the test of time, and he did not believe that anything else was quite equal to it. He preferred the cold bath, and next to that the cold pack. In the way of stimulus he preferred whisky, because it was the form of alcohol which the average patient could obtain the purest and at the least cost. As regards the abortion of typhoid, he believed that quite as many cases aborted without as with medication.

Dr. J. West Roosevelt said that he was very glad to hear Dr. Peabody speak so confidently of the good effect of properly prepared solid food. For some time past he had been tentatively pursuing a similar course with more or less fear and trembling, and he said he should now feel encouraged to go on with the practice, especially as he had never observed any but favorable results from it.

There was an extremely interesting session of the Pathological Society on the 15th of January, when the Middleton Goldsmith lecture for 1890 was delivered by Dr. William Pepper, of Philadelphia, who took for his subject, "Hepatic Fever." A special feature of the occasion was the presentation to the society by ex-President,

W. P. Northrup, M.D., on behalf of the donors, of fine portraits of the three founders of the Pathological Society, Dr. Lewis H. Sayre, John C. Peters and Middleton Goldsmith. The new President, Dr. J. West Roosevelt, was in the chair, and many prominent and distinguished medical men were present.

At the annual meeting of the New York County Medical Association, held the third week in January, the following officers were elected: President, Charles S. Wood, M.D.; Vice-President, George T. Harrison, M.D.; Recording Secretary, P. Brynberg Porter, M.D.; Corresponding Secretary, Augustus D. Ruggles, M.D.; Treasurer, John H. Hinton, M.D.; Member of the Executive Committee, A. Palmer Dudley, M.D. On this occasion an eloquent tribute to the memory of the late Dr. Isaac E. Taylor was delivered by Dr. John Shrady, and suitable resolutions in regard to the death of Dr. Taylor were adopted. A committee was also appointed to prepare memorials of the lamemented Dr. Lewis Hall Sayre and other recently deceased members of the association. The County Association now has a membership of nearly 450, and during the year that is just past it received the remarkable accession of 183 to its numbers, an increase of 70 per cent.

The Messrs. Appleton announce the publication at an early date of a course of six lectures on Abortion delivered this season at the College of Physicians and Surgeons by Prof. T. Gaillard Thomas. As the little book will embody the results of Dr. Thomas' vast experience during the past thirty-five years upon a subject in regard to which there is still a wide diversity of opinion and no little vagueness in the minds of many of the profession, but which is, nevertheless, one of the greatest possible practical importance, its appearance will no doubt be looked for with unusual interest.

During the first two weeks of January the death-rate of the city, owing, it would appear, to the effect of the prevailing epidemic of influenza, became unprecedentedly high; but of late there has been a marked diminution in the mortality, although the number of deaths per week is still considerably greater than in the early part of December. P. B. P.

ASSOCIATION NEWS.

Preparations for the Forty-first Annual Meeting.

To the Editor:—I write to state that arrangements for the next meeting of the American Medical Association are being made rapidly and satisfactorily by our several committees. The Committee on Halls and Hotels have completed their work. The general meetings will be held in our largest and finest theatre, the Vendome. A splendid hall has been procured for the meeting of every Section, and all of these are within two minutes' walk of the Vendome.

The Committee on Entertainments will do their duty, and will have in store much pleasure for all who may attend; but the entertainments will be so arranged as not to conflict with either general or Sectional meetings.

Our hotels and boarding-houses can accommodate as many as will come. May we not hope for two thousand at least?

The Committee on Reception will meet all incoming trains, and will welcome all who come, and aid them in securing places for rest and refreshment.

The charges at the hotels will be from $1.50 to $5 per day. There are only a few rooms, and in only one hotel, the Duncan, at $5. Rooms can be engaged beforehand by communicating with Dr. N. D. Richardson, chairman of the Committee on Hotels, or the undersigned.

Exhibitors should communicate with Dr. J. B. Lindsley, who has already procured a large hall for the exhibits. He is chairman of the Committee on Exhibits.

The chairman, with his secretary, of each Section should have his programme ready for publication early. The order of programme, as made out and sent to us, will be strictly observed in the publication for use at the meetings.

As local Secretary I will take pleasure in giving any information that may be desired. Yours, etc. G. C. Savage, M.D.

Nashville, Tenn., January 20, 1890.

MISCELLANY.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from January 18, 1890, to January 24, 1890.

By direction of the Secretary of War, the leave of absence granted Major Calvin DeWitt, Surgeon, in S. O. 146, Dept. of Dak., December 21, 1889, is extended to include February 27, 1890. Par. 5, S. O. 12, A. G. O., Hdqrs. ofthe Army, January 15, 1890.

By direction of the President, the Army Retiring Board appointed by War Dept. order dated January 8, 1890, from Hdqrs. of the Army, to meet at Los Angeles, Cal., will meet for the examination of Major Leonard Y. Loring, Surgeon, at San Diego, Cal. S. O. 18, A. G. O., January 22, 1890.

Capt. William G. Spencer, Asst. Surgeon (Ft. Bridger, Wyo.) granted leave of absence for one month. Par. 1, S. O. 4, Dept. Platte, January 20, 1890.

By direction of the Secretary of War, the extension of leave of absence granted Capt. Charles S. Black, Asst. Surgeon, in S. O. 1, Dept. of the Platte, January 1, 1890, is further extended to include April 30, 1890.

Capt. Charles S. Black, Asst. Surgeon, resignation accepted by the President, to take effect April 30, 1890. Par. 1, S. O. 18, A. G. O., January 22, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending January 25, 1890.

Asst. Surgeons T. A. Berryhill and A. R. Wentworth, ordered to examination preliminary to promotion.

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ORIGINAL ARTICLES.

INFANTILE MORTALITY: ITS CAUSATION AND ITS RESTRICTION.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY VICTOR C. VAUGHAN, M.D., Ph.D.,

PROFESSOR OF HYGIENE AND PHYSIOLOGICAL CHEMISTRY IN THE UNIVERSITY OF MICHIGAN, DIRECTOR OF THE MICHIGAN STATE LABORATORY OF HYGIENE, MEMBER OF THE MICHIGAN STATE BOARD OF HEALTH, MEMBER OF THE GERMAN CHEMICAL SOCIETY, HONORARY MEMBER OF THE FRENCH SOCIETY OF HYGIENE, ETC.

That the death-rate during the first five years of life should be higher than for the same number of years at any subsequent period might be expected to be true. There are many factors contributing to this result. Some of these are easily recognized, and might be largely eliminated without any great effort. Others are evident, but can not be prevented without radical changes in social life, while still others are obscure. So long as the weak as well as the strong continue to procreate their kind, infantile mortality will be great. So long as tuberculosis, syphilis, and even idiocy are not regarded as bars to the reproduction of the species, weak, diseased and mentally incompetent children will be born; and looking at it from a philosophic standpoint, it is better for the future of the race that many of these should die, but it would be better still had they never been born. "Multiply and replenish the earth" is followed with more persistency than any command of the decalogue, and too often without any thought of the kind of material with which the earth is being replenished. However, as deplorable as this thoughtless and often sinful assumption of paternity and maternity is, it is not so bad as the criminal means often resorted to in order to prevent it. Great infantile mortality is not so disastrous to the progress of the race as is fœticide.

It is the purpose of this paper to ascertain, 1, what the infantile death-rate is; 2, what are its most potent causes; and, 3, what measures might be resorted to in order to lessen it.

The number of births reported as having occurred in the United States during each of the census years ending June 1, 1860, 1870 and 1880, were respectively 1,072,090, 1,287,670 and 1,577,133. [See mortality volumes of the census reports for these years.] According to the mortality rate of the census year 1870, found by adding 41 per cent. to the deaths reported, the number of those born in the United States which reached 5 years of age are for those born in 1860, 784,545; for 1870, 942,304: and for 1880, 1,153,144. In other words, of those born in 1860, 26.8 per cent. died under 5 years of age, and this figure practically holds good for the years 1870 and 1880. Thus, a little more than one-fourth of the children born in this country die before they reach 5 years of age. Of the deaths under 5 years of age in 1880, 57.8 per cent. occurred during the first year.

Having ascertained the death-rate among infants, the next inquiry will be in regard to the causation of this mortality, which must be regarded as high. In the first place, is there any difference in the death-rate among those born and reared in cities and those born to the rural population? The following table gives us the best information which I am able to secure on this point:

TABLE 1.—Exhibiting the reported number of births and of deaths of those under one year of age in the United States during the census year 1880, classified in rural and city (49 large) populations, with distinction of sex. (Compiled from the Tenth Census of the United States, 1880, Vol. XXII, Mortality and Vital Statistics, Part 2, p 634.)

UNDER ONE YEAR OF AGE.

Population.	Sex.	Tot. births during the Census Year 1880.	Deaths per 1,000 during Census Year of those Born Within the Year.	Deaths	Deaths per 1,000 of living population.
	M.	690,095	78.1	70,700	111.1
	F.	658,546	63.0	56,909	92.2
Rural—Total .		1,348,661	141.1	127,609	203.3
	M.	116,851	162.4	26,149	267.2
	F.	111,761	132.8	21,426	221.1
Cities (49 large) Total		228,612	295.2	47,575	488.3

NOTE.—For the names of these 49 cities, see pages 80–82, and 634, of the volume mentioned in the heading of this table.

Table 1 shows that infantile mortality is much greater in urban than in rural populations. This is undoubtedly due to a number of causes, some of which we can better appreciate after we have ascertained the diseases to which the great mortality is due. However, there is one point to which I desire to call attention here. It might be supposed that the children born in cities are weaker naturally than those born in the country. In only the largest cities is the death-rate among children due to debility higher than in the country, and this is caused, to a large extent, by crowding, by want of proper food, and by neglect. Dr. Würzburg says: "According to Dr. L. Pfeiffer the death-rate from debility is seemingly greater in the larger than in the smaller cities. This supposition seems to obtain in a certain sense in Prussia, for the deaths from debility during the years 1878–1880 in seven cities with more than 100,000 population were 35.7, 36.7, and 38.7 per 1,000; and in sixty-one cities with populations of from 20,000 to 100,000, only 28.5, 29.4, and 29.9. These figures indicate that the death-rate from debility is decidedly greatest in the larger cities, while the average death-rate from debility in all the cities is yet lower than that in the rural districts. The high death-rate of illegitimates is an important factor in the cities; thus, Köln, with a death-rate of all infants of 24.06 per cent., loses 27.48 per cent. of those illegitimately born."

The death-rate from debility during the first year of life was, during the years 1875–77, for each 1,000 living children born in the whole of Prussia, 30.4; for those born in the cities, 28.9; for those born in the rural districts, 31.1. These figures show that the high mortality of children born in cities is not due to general debility or weakness of constitution, and show us that we must look for an explanation from some other source. In this search let us ascertain, from the following tables, to what diseases infantile mortality is most largely due.

Table 2.—Exhibiting the number of deaths reported from each of eleven diseases, in persons under five years of age and in each year of age under five years, together with the total number of deaths from each of these diseases in persons of all ages in the United States during the census year 1860. *(Compiled from the Eighth* Census of the United States, 1860, Mortality and Miscellaneous Statistics.)

Disease.	All Ages.	Under 1.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	Under 5.
Cholera Infantum . . .	4,808	2,959	1,339	352	89	48	4,787
Convulsions	9,077	5,099	1,152	597	306	174	7,328
Croup	15,211	5,409	2,759	2,412	1,815	1,140	13,535
Diarrhœa.	7,850	2,690	2,137	843	252	124	6,046
Dysentery	10,468	2,482	2,479	1,326	576	288	7,151
Inflam. of Brain	10,349	2,989	1,786	994	521	367	6,657
Measles	3,899	760	884	646	332	188	2,810
Pneumonia.	27,094	5,045	2,624	1,456	760	496	10,381
Scarlet Fever.	26,402	2,601	3,443	3,886	3,457	2,757	16,144
Teething	4,909	1,951	2,348	501	42	18	4,860
Whooping-cough. . . .	8,408	3,723	2,081	1,066	501	314	7,685

In the study of tables 2, 3 and 4 we are confronted with certain difficulties which it is at present impossible to wholly overcome. More than 17,000 deaths are reported as due to convulsions, and more than 4,000 to teething. How the deaths reported as due to convulsions should be apportioned to the various diseases of which convulsions form a prominent symptom, no one can tell with certainty. In Dresden 281 deaths were reported from July 11 to September 25, 1886, as due to convulsions. Subsequent investigation into the histories of these cases by a competent medical officer showed that primary disease of the nervous system was responsible for only thirty-six of these, while cholera infantum and diarrhœa caused the death of seven-eighths of those reported as dying of convulsions. These figures will probably hold good for the United States, and we are justified, I think, in claiming that more than 90 per cent. of the deaths reported as due to convulsions are really due to digestive disturbances.

Table 3.—Exhibiting the number of deaths reported from each of eleven diseases in persons under five years of age, and in each *year of age under five, together with the total* number of deaths from each of these diseases in persons of all ages in the United States during the census year 1870. (Compiled from the Ninth Census of the United States, 1870, Vital Statistics.)

Diseases.	All Ages.	Under 1.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	Under 5.
Cholera Infantum. .	20,255	13,375	4,924	1,188	329	161	19,977
Convulsions	12,751	8,563	1,614	642	329	173	11,321
Croup	10,692	4,855	2,102	1,390	943	560	9,859
Diarrhœa	14,195	4,554	2,833	1,310	485	274	9,456
Dysentery	7,912	1,984	1,698	783	320	219	5,004
Inflam. of Brain . .	13,701	4,152	2,283	1,189	718	489	8,831
Measles.	9,237	1,871	2,222	1,257	728	387	6,465
Pneumonia	40,012	7,252	3,686	1,929	1,046	653	14,566
Scarlet Fever	20,320	2,100	2,967	3,262	2,930	2,296	13,555
Teething	3,247	1,444	1,488	274	28	1	3,235
Whooping-cough . .	9,008	4,424	2,086	1,063	529	294	8,396

Table 4.—Exhibiting, according to the reports (with distinction of sex), the number of deaths in each 1,000, deaths in all ages from each of eleven diseases, in persons under five years of age and in each year of age under five years; together with the total number of deaths from each of these diseases in persons of all ages in the United States during the census year 1880. (Compiled from the Tenth Census of the United States, 1880, Vol. XII, *Mortality and* Vital Statistics, Part 2.)

Diseases.		All Ages.	Under 1.	1 to 2.	2 to 3.	3 to 4.	4 to 5.	Under 5.
Cholera infant'm	M.,	13,168	673.99	251.25	58.48	10.57	5.70	1000.00
	F.,	11,815	669.41	254.49	57.12	14.24	4.75	1000.00
Convulsions. . .	M.,	9,491	690.57	122.25	57.95	25.38	16.18	912.33
	F.,	8,353	635.68	120.00	61.62	33.87	15.98	867.15
Croup..	M.,	9,753	380.68	173.90	140.70	103.60	75.95	874.82
	F.,	8,213	354.40	171.28	153.71	106.26	77.98	863.61
Diarrhœa	M..	5,953	397.97	189.36	60.98	21.45	10.14	679 90
	F.,	4,872	420.52	199.83	66.06	21.88	8.26	716.56
Dysentery. . . .	M.,	7,013	260.21	228.40	166.03	43.56	23.64	661.84
	F.,	6,414	240.89	202.88	103.71	35.51	21.59	604.57
Inflam. of Brain	M.,	5,869	318.54	172.07	82.28	44.38	31.24	648.51
	F.,	5,034	312.71	175.25	84.94	46.15	38.39	657.45
Measles.	M.,	3,980	267.44	208.26	125.91	68.75	41.80	712.16
	F.,	4,092	230.64	193,63	117.40	63.73	41.91	647.30
Pneumonia. . .	M.,	35,493	137.50	73.99	40.36	20.49	13.42	295.75
	F.,	27,560	146.54	81.83	44.24	23.38	15.55	311.53
Scarlet Fever. .	M.,	8,181	100.83	137.71	161.36	141.14	109.78	650.82
	F.,	8,207	73.36	123.78	145.51	130.74	116.21	589.60
Teething	M.,	2,171	419,74	465.41	95.94	12.45	4.15	997.69
	F.,	2,093	422.29	478.72	83.69	9.09	1.91	995.70
Whooping-cough	M.,	5,133	530.57	230.51	102.36	47.27	26.76	937.49
	F.,	5,931	498.56	224.26	118.43	57.10	32.44	930.90

In studying the diseases given in tables 2, 3 and 4, I shall divide them into *three* classes. The first class includes cholera infantum, convulsions, diarrhœa, dysentery and teething, diseases which cause more than 50 per cent. of the deaths which occur among children under 5 years of age. Now, what facts can be ascertained concerning the causation of this class of diseases? We have the following:

1. These diseases are most prevalent among children artificially fed.

Prof. Bölkh reports the following table of 1,000 deaths in Berlin in 1885, of those under 1 year of age:

	Mother's milk.	Wet nurse.	Animal milk.	Milk Foods.
Legitimate	7.4	7.7	42.1	67.7
Illegitimate	11.0	.0	63.2	127.8
Total	7.6	7.4	45.8	74.8

2. These diseases are more prevalent in cities than in country places. In Prussia, during the years 1875–77, the average death-rate from these diseases among those under 1 year of age was for each 1,000, 111.1; in rural districts, 96.5; in cities, 139.7.

3. These diseases are more prevalent in summer than in winter. This statement is graphically illustrated in the following plates, and it is also demonstrated in table 5.

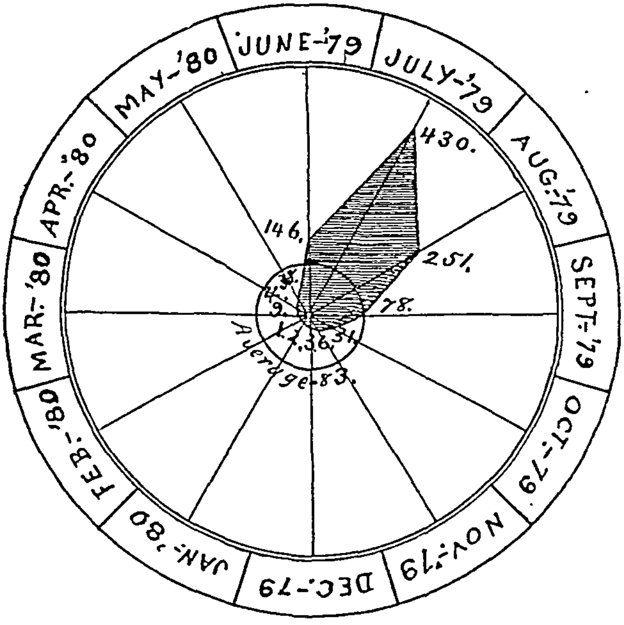
Recognizing the above facts, we must admit that the deaths from this class of diseases will be best restricted by attention to the food of children. Mother's milk is the best food for infants under 1 year, and the principal reason for its being the best is that when taken from the breast of the mother the milk is most likely to be free from germs. City children fare worse than those raised in the country, because when artificially fed the milk is not so fresh, and is likely to be infected with putrefactive microörganisms. These diseases are most prevalent in the summer, because putrefactive germs are more widely distributed at that season than at any other.

TABLE 5.—Exhibiting, by months, the number of (reported) deaths from each of eleven diseases in the United States during the two census years *1860* and *1870*. Compiled from the U. S. Census Reports for those years.

DISEASE.	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Cholera Infantum.	629	611	689	775	1,495	2,314	5,338	6,596	3,745	1,668	616	580
Convulsions	1,848	1,828	2,165	1,952	2,265	1,654	2,037	2,034	1,745	1,485	1,303	1,481
Croup	2,938	2,749	2,799	2,191	2,101	1,188	1,214	1,424	1,860	2,452	2,376	2,546
Diarrhœa	670	613	690	784	1,597	1,868	3,767	4,883	3,643	1,939	891	669
Dysentery	482	454	482	611	1,281	1,385	2,644	4,389	3,563	1,878	658	496
Inflam. of Brain .	1,792	1,873	2,221	2,041	2,492	1,756	2,417	2,752	2,472	1,639	1,239	1,330
Measles	846	1,212	1,897	1,973	1,973	1,390	1,136	849	524	425	363	525
Pneumonia	8,401	9,271	10,582	8,311	6,350	3,118	2,281	2,364	2,748	3,375	4,510	5,667
Scarlet Fever . . .	4,928	5,357	5,957	5,213	4,969	2,914	2,611	2,531	2,488	2,701	3,057	3,908
Teething	389	381	472	545	901	748	1,068	1,265	965	643	374	372
Whooping-cough.	1,093	1,332	1,190	1,174	1,285	1,348	1,580	1,850	1,644	1,172	852	896
Av. temperature. *	36°	38°	45°	54°	66°	74°	78°	76°	69°	56°	46°	38°

* At six stations in the United States for a series of years.

DEATHS FROM CHOLERA INFANTUM, BY MONTHS, IN 31 REGISTRATION CITIES IN THE U. S.



From Vol. XII, Tenth Census United States, Part 2.

A second class of diseases seriously affecting infantile mortality comprises diphtheria (reported in the United States census as croup), measles, scarlet fever and whooping-cough. These are universally regarded as contagious, and they are to be restricted by isolation and disinfection.

While I have no doubt that a microörganism is concerned in the production of pneumonia, I think that the weight of evidence at present is that exposure to marked changes in external temperature is an important, and probably a necessary factor in the causation of this disease. Deaths from pneumonia may be restricted by avoiding such exposure.

In concluding I may give the following answers to the questions asked in the beginning of this paper:

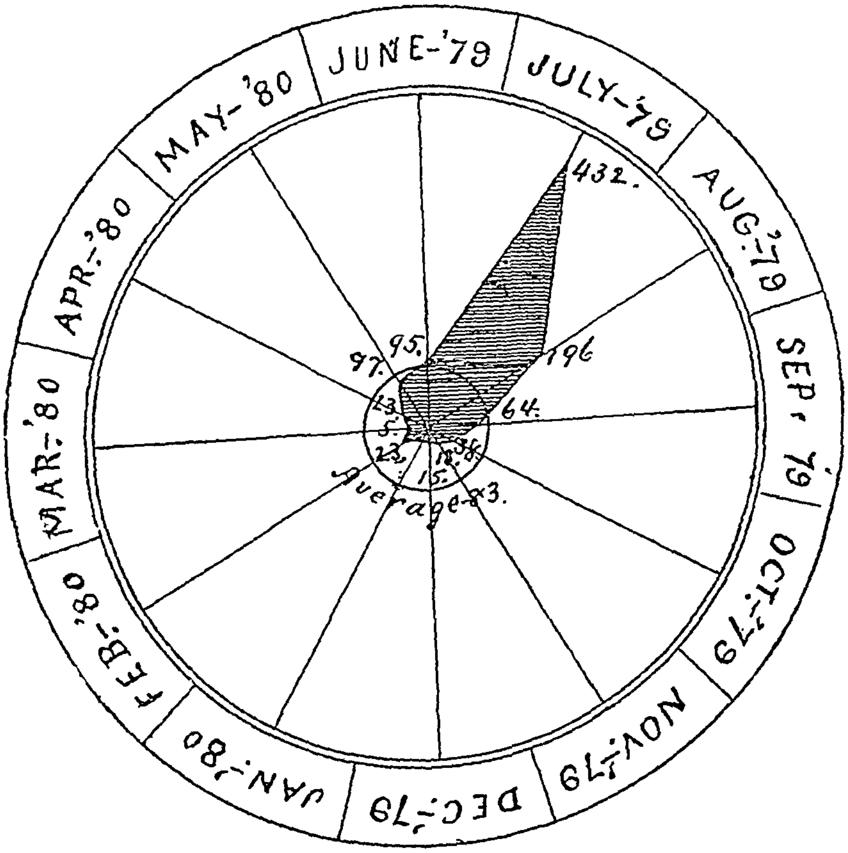
1. One-fourth of the children born in the United States die before they reach the end of the fifth year of life.

2. Derangements of digestion cause more than 50 per cent. of these deaths. This class of diseases may be restricted by proper attention to the food.

3. Infectious diseases are serious in their effects upon infantile mortality. They may be restricted by isolating the sick and disinfecting clothing and rooms.

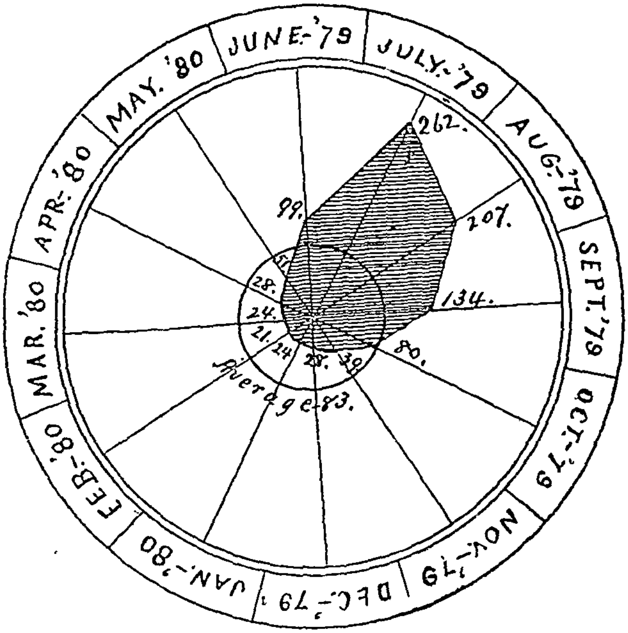
4. About three-eighths of the total deaths from pneumonia occur among those under 5 years of age. Proper clothing and lessened exposure to extremes of temperature will do much to protect against this disease.

DEATHS FROM CHOLERA MORBUS, BY MONTHS, IN 31 REGISTRATION CITIES IN THE U. S.

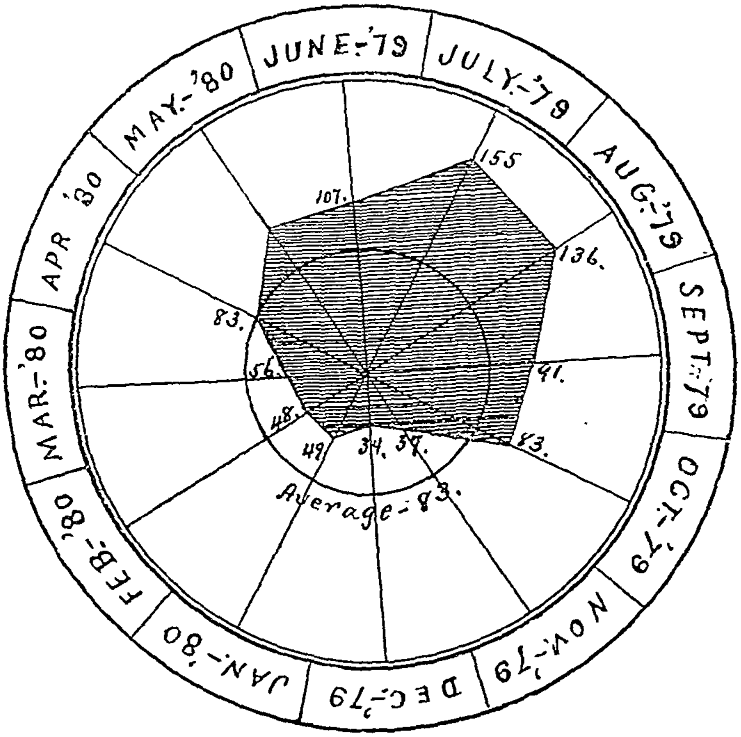


From Vol. XII, Tenth Census United States, Part 2.

DEATHS FROM DIARRHŒA AND DYSENTERY, BY MONTHS, IN 31 REGISTRATION CITIES IN THE UNITED STATES.



DEATHS FROM DENTITION, BY MONTHS, IN 31 REGISTRATION CITIES IN THE UNITED STATES.



From Vol. XII, Tenth Census United States, Part 2.

FOOD IN THE TREATMENT OF PULMONARY CONSUMPTION

Read in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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Rational therapeutics must be based on sound pathology. As an element in such pathology we are justified in considering empirical results of certain plans of treatment, independently of the views which have led to the adoption of that treatment. The scope of this paper is therapeutic, but in order that the objective points of therapy may be clearly set forth, it is necessary briefly to allude to certain moot questions of pathology.

The term pulmonary consumption is used in preference to the term tuberculosis, because the prevailing opinion of the day regards that pathological product called tubercle as the result of the vital activity of the microörganism known as the bacillus tuberculosis of Koch—while the therapeutic method to which attention is invited is not directed against that organism, its activity, or its products; but against the morbid process which permits it to obtain pabulum, and therefore to flourish, within the human body.

Without being hypercritical, it is still necessary to use terms accurately. If by tuberculosis we mean a disease whose natural history is but the history of the growth of a bacillus, and the consequences, direct and indirect, of that growth, then the feeding of patients affected with that disease can have no therapeutic influence upon the tuberculous process; but the feeding of patients affected with consumption has great therapeutic influence upon the consumptive process. It becomes necessary, then, in deference to the received opinion which substitutes bacteriology for morbid physiology, as the fundamental science of pathology, to emphasize the distinction forcibly drawn by Niemeyer when he declared that the great danger of phthisis was tuberculosis. In other words, that condition which is commonly alluded to by writers holding the current view, as a "predisposition," "want of immunity," "lack of resisting power," "presence of culture medium," etc., is, in this paper, regarded as the disease itself—the consumption, the phthisis—against which the efforts of the physician are to be directed; and the bacillary features—the tuberculosis if you will—are regarded as epiphenomena. This view finds support in the pregnant utterance of that philosophic thinker and keen observer, Benjamin Rush, the greatest of American physicians, who, in opposition to the crude pathology of his own day, declared "that the abscess, cough, tubercles, ulcers, and *purulent* or bloody discharges which occur in the pulmonary consumption are the effects and not the causes of the disease." I do not wish to be understood as subscribing to the pathology of Rush in all its details. In a century we learn something. If future research with better knowledge of physiological chemistry shall indubitably establish the claims now made as to the pathogenetic powers of microörganisms, and of alkaloidal products resulting from their activity, it will become necessary to revise a large portion of our nosology; and particularly in the disease, or răther in the morbid processes, now under consideration, will we have to recognize the existence of several distinct stages, each of which will require for clear understanding a distinctive name. By consumption, then, we mean, not a local disease resulting from the parasitic activity of a microörganism, but with Rush, "a disease of the whole system," an aberration of nutrition, the proximate cause of which is as yet undetermined; the remote causes being heredity, unhygienic life and surroundings, previous debilitating disease, and those influences in general to which we apply the term depressing; and in the pulmonary form of the disease to which attention will now be limited, we find as an additional etiological factor, partly remote, partly proximate (so far as local conditions are concerned), that special form of hygienic error which is expressed by the term improper breathing; whether we refer to the nature of respired substances or to the performance of the act of respiration.

Holding these views as to etiology and pathology, therapeusis becomes at once simplified. We can dismiss from consideration altogether the bacillus and its alkaloids, except as these may give rise to intercurrent symptoms which require special interference, determined by the special nature of the symptoms. The stern logic of experience has abundantly demonstrated, if not the folly, at least the inutility with our present resources, of attempts at specific microbicidal treatment; and the physiological or chemical antidotes to ptomaines can only be determined by the character of their toxic effects. Therefore, as already stated, symptomatic treatment can alone be employed.

But reflection makes evident, and universal experience confirms, that against the disease itself, against the consumption, the malnutrition general and local, direct measures may be employed. And the nature of the morbid process indicates at once the nature of the remedy.

The disease is one of malnutrition, of wasting. The remedy is nutrition, feeding. The result in any particular instance depends upon the extent to which the disease has progressed; the causes, proximate and remote, of the general and local morbid processes; and the degree in which the patient can be removed and protected from the continuous action of the causes. Therefore it is that heredity, from whose influence removal is

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[1] An Inquiry into the Cause and Cure *of the Pulmonary* Consumption. Medical Inquiries and Observations, Phila., 1805, 2d edition, Vol. II, p. 82.

impossible and protection difficult, plays such an important part in increasing the mortality, by diminishing the powers of recovery. Nevertheless, even the dangers arising from heredity can to greater or less extent be overcome by judicious management, and life be saved or greatly prolonged.

We have spoken of the powers of recovery; and this is the keynote of treatment. Many consumptives get well under judicious treatment, and some in spite of injudicious treatment; but we cannot, in a strict use of words, speak of consumption as being cured. The physician helps his patients to recovery. By altering their environment, he puts them into favorable condition for the inherent powers of the organism to restore the equilibrium of vital action which constitutes health. But that is the highest triumph of the healing art. Nature herself becomes art's obedient servant.

In the judicious treatment of cases of pulmonary consumption medicines, so-called, have their appropriate place. Medicinal treatment, however, must be distinctly secondary and tributary to hygienic treatment; and the most important item of hygienic treatment is diet.

Diet in this connection is of two kinds, alimentary and respiratory. Air is food, equally with meat and drink. One is not less important than the other. Proper regulation of both is absolutely necessary. While it has long been recognized that nourishing food is of the greatest necessity in the management of cases of pulmonary consumption, within recent times the experience of Debove has most of all contributed to the proper appreciation of this fact by the profession. It is unnecessary to do more than allude to the reports of this observer upon the value of overfeeding by means of the stomach-tube, for these reports have been abundantly confirmed by subsequent experience of competent observers in all countries.

The great value of Debove's demonstrations, moreover, consists not so much in the method of alimentation employed—for resort to the stomach tube may be reserved for special cases—but in the fact they prominently brought forth, that consumptives, despite loss of appetite, retain good powers of digestion and of assimilation for certain kinds of food; that, indeed, they are able to dispose of a quantity far in excess of the needs of healthy persons; and that by means of this excessive quantity, this superalimentation, not only can present waste be checked, but past waste be repaired. Debove, too, indicated the most serviceable articles of food, namely: beef-powder, eggs and milk; in other words, a highly concentrated nitrogenous dietary.

The results of experience in treatment are surely as fully worthy of confidence as the results of experience in the physiological or pathological laboratory. These results seem to justify the opinion that as in diabetes—a wasting disease whose frequent termination in phthisis justifies the suspicion of a strong kinship between them—there is imperfect metabolism of carbohydrates; so in consumption, there is imperfect metabolism of the same class of food stuffs.

The problems of metabolism in nutrition, are not yet sufficiently clear of solution, to venture any explanation, either of the cause or the exact mechanism, of this failure; but by putting in this form the statement of experience that consumptives, like diabetics, do best on a nitrogenous dietary, we are enabled to make the fact more prominent. Experience also shows that beef is the best form of nitrogenous aliment in these cases. A group of practitioners in New York have had considerable success by restricting their patients to an exclusive diet of beef, combined with copious potations of hot water. This plan, I can personally testify from examination of patients thus treated, does yield excellent results; but I have obtained equally good results in my own practice with a more varied dietary; of which, however, beef forms the principal item. It should be tender and juicy, and the removal of fibrous parts is an advantage. It may be broiled or roasted, but should always be done rare. It may be finely chopped, moulded into little patties and broiled just sufficiently to brown the outside, then seasoned with salt, pepper, thyme, parsley, etc., to taste. It may be eaten raw if desired, and if no apprehension of tænia be entertained; but there is no advantage in raw beef over rare broiled steak or rare roast. Beef should be eaten at least twice, and if possible, three times, a day. When there is danger of the patient tiring of it, mutton, fowl, sweetbreads, eggs, fish or game may be occasionally substituted. Milk should also form an important portion of the dietary. The effort should be made in the majority of cases to have at least a quart and a pint of milk and a pint of cream taken during each twenty-four hours. Kumyss, or some of the other fermented preparations of milk, are often highly useful. Soups, and broths of all kinds, not likely to cause indigestion, and not containing any of the prohibited vegetables, may also be partaken of. The leguminous vegetables, peas, beans and lentils, as well as lettuce, cresses, spinach, and the other green vegetables, which contain those alkaline salts of organic acids so highly necessary to the proper constitution of the blood, should be freely eaten; but potatoes, turnips, beets, and the starchy and sugary vegetables generally, should be avoided, or cut down to the lowest limit. Bread should be reduced to a minimum, and gluten bread or that made from the whole wheat, substituted for the ordinary white bread. Pastries, sweets, and in general, those articles of diet which are indigestible or digestible only with difficulty, must be prohibited.

Although in consumption, as in diabetes and gout, the carbohydrates are not properly assimilated, yet other forms of hydrocarbonaceous food are not only harmless, but are absolutely required. The hydrocarbonaceous residue, which, as Pavy has shown, remains after urea has been separated from the proteids, furnishes this in part. In addition, fats in the form of oil dressing for salads, mutton-fat, beef-fat, and, above all, butter, should be eaten in rather large quantities. The cream already spoken of will also furnish a certain amount of fat. Cod liver oil and oleaginous inunctions may be resorted to when necessary. Alcohol also plays the part of a food, as well as that of a medicine, in this affection, more especially in febrile cases. It is best given with some other food, as milk, cream, eggs, or cod liver oil. In some cases, for prudential reasons, it may be disguised as malt extract, or made into a prescription with glycerine, as advised by Jaccoud. Water should be taken freely, and hot water, a pint or so, an hour before each meal, does certainly help to prepare the mucous membrane of the alimentary canal for the reception and proper disposition of food, as well as assist in passing off through the kidneys the greater amount of certain of the waste products of metabolism consequent upon the character of the diet.

The frequency of taking food should not be left to the whims or discretion of the patient. Everything should be accurately prescribed, not only as to quality and quantity of food, but also as to the exact times of eating. Individualization, in special character of food, and in special time of meals, is as necessary, as individualization in selection and dosage of drugs. Here, however, we can only speak in general terms. Rarely more than three hours, never more than four hours, except during sleep, should elapse between the times of taking food, and not only should a glass of milk, cream, or milk punch be taken just before going to bed, but there should be something of the kind, or perhaps a glass of wine or spirits, with some suitable meat preparation, like liquid peptonoids, by the bedside within easy reach of the patient, in case of waking during the night or early morning

When digestion seems to be impaired, or when a sufficient quantity of ordinary food cannot be taken, or when for any reason it is desired to save for other purposes part of the energy that would be required for digestion, predigested foods may be employed.

The milk used by the patient may be partially peptonized, or the alkaline pancreatic preparation simply be added to it at the moment of drinking, the peptonization being thus artificially effected within the alimentary canal. Peptonized beef tea, a preparation which, unlike ordinary beef tea, is a true food, may be prepared at home, or some of the excellent preparations of predigested beef which are now on sale at the shops, may be obtained. Of these preparations I have derived most satisfaction from the use of Reed & Carnrick's beef peptonoids, of which from one ounce to four or five ounces daily is given, according to indications. It may be made into a paste and spread upon bread, or added to hot water, soup, hot milk, or milk and alcohol. I prefer the latter methods.

We may thus outline an ordinary routine, susceptible of modification with the season and according to individual taste or circumstances. The patient should drink a pint of hot water on awakening in the morning and a little later take a glass of milk punch with a tablespoonful of beef peptonoids. An hour or so after this, follows breakfast; consisting of rare broiled beefsteak, mutton chops, broiled fish, or eggs boiled or poached, with coffee or chocolate if desired, milk, sliced tomatoes or other seasonable vegetable, a moderate amount of bread, with a great deal of butter. If much desired, a dish of gruel or porridge, preferably cracked wheat, may be allowed. Two or three hours later, kumyss, or soup, or broth strengthened with beef peptonoids, milk, butter and bread, celery and a salad of greens, follow. At one or two o'clock a substantial dinner is eaten, of which bouillon, with or without beef peptonoids, is the first item, and rare roast beef the principal dish; the meal consisting in addition, of the allowable vegetables, especially the greens; and when possible a glass of burgundy or other generous red wine or good wine of coca, or even a glass or two of beer, is drunk during the meal. Fruits are the only permissible dessert. Dinner should, in many cases, be preceded by the drinking of hot water, half a pint to a pint, half an hour to an hour before eating. Hot lemonade is sometimes more agreeable. At three or four o'clock comes kumyss, or cream, or milk punch with peptonoids, or malt extract; at six or seven, supper of a character similar to the breakfast; at nine, or at latest ten o'clock, bed time, the patient drinks cream with coca, coca wine, or milk and liquid peptonoids, with or without coca; while coca wine, or milk, or cream, with or without alcohol and peptonoids, is placed within easy reach for use on waking during the night. Cold water may be taken at suitable intervals between meals, never with meals.

While the digestive apparatus is not to be burdened beyond its capacity, the object is distinctly cramming—over-feeding—and when it cannot be properly carried out in some such manner as this the tube of Debove should be used without hesitation. For artificial feeding, peptonized milk, with beef powders, leguminous powders, predigested cereal preparations, or raw eggs, should be employed. Alcohol and the digestive ferments may also be added, when indicated. About a quart should be introduced into the stomach at each feeding, and not less than two feedings a day be practiced. The patient may also be allowed to eat, or to drink nutritious liquids, in the intervals. When gavage is practiced, it is well to precede it by lavage with alkaline solutions, to which a little chloroform water has been added.

In order to enable the patient to digest and to assimilate this excessive amount of aliment, not only must the alimentary canal and its adnexa, immediate and remote, be put and kept in good condition, but a proper supply of air must be afforded. This we have spoken of as the "respiratory diet." Arbuthnot's characterization of respiration as the "second digestion," cannot be too often quoted. In a few cases of comparatively early date, the institution of appropriate voluntary muscular exercise, both indoors and out of doors, will accomplish all that is necessary in this direction. Sydenham asserted that a journey on horseback is an infallible cure for consumption, and Rush endorses the statement, adding instances also of the well known good effects of out-door life, in military camps, among lumbermen and charcoal burners, on hunting expeditions, etc. But patients who can be advised to undertake these journeys must retain a certain amount of vigor and must be so circumstanced that they can afford to follow the advice. In the vast majority of cases, either on account of the patient's muscular weakness, or of domestic and business ties, precluding absence in camp or on journeys, artificial aids to respiration must be employed at home. The best of these is the inhalation of compressed air after the method of Waldenburg. For use in the physician's office the apparatus of Waldenburg still holds its own, as a convenient and efficient instrument. In order to obtain the greatest benefit possible, however, it is necessary to enable the patient to carry out the treatment in his own home, for bad weather and a score of other causes may interfere with his regular visits to his medical attendant. If I venture to recommend for this purpose instruments of my own device, it is because these are the only available apparatus of which I have knowledge. They are not and will not be patented.

There are two forms of apparatus, applicable to two different classes of patients. First, the combination of a bellows with a small gasometer, or of a doubly acting bellows with a pair of gasometers, made by Metzger, of Philadelphia, and known as the Cohen-Richardson apparatus; and, Second, the little pocket apparatus made for me by Codman & Shurtleff, under the name of the Pneumatic Resistance Valves.

The first of these instruments, described in the *New York Medical Journal*, October 18, 1884, has been in use for more than six years and, with some improvements suggested by experience, has given complete satisfaction. It is simply a cheap and convenient method for administering inhalations of compressed air, or such inhalations combined with expiration into rarefied air.

The second, for use primarily with stronger patients, or secondarily to keep up the good effects obtained by the first method after cessation of active treatment, was described in the *New York Medical Journal* December 6, 1887, and is here exhibited. By interposing into the current of respired air a measured impediment (namely, an ebonite valve controlled by a spiral spring, the tension of which may be regulated by a screw) we are able to offer a definite, regulated resistance either to expiration or inspiration, or to both, as may be desired. We thus obtain the physiological and therapeutical effects of inhalation of rarefied air or of exhalation into compressed air; and the instrument is applicable in all cases where these particular therapeutical expedients are indicated. By combining with a compressed air apparatus an expiration resistance valve, we are enabled to get the effects of continuous respiration of compressed air in the rare cases that this method is of benefit. I have not, however, found either the latter, or expiration into rarefied air, of greater benefit in the dietetic treatment of consumption than the simple inhalation of compressed air, to the very great benefits of which, after this necessary instrumental digression, I now desire to call attention.

The mechanical-physiological principles involved, have been elsewhere fully discussed and need not here detain us. The fundamental law of physics that motion takes place in the direction of least resistance, explains them all. The physiological-therapeutical effects are partly local, partly general. Locally the effects are:

First, restoration of proper expansion of the lungs, whether deficient expansion has resulted simply from debility of the muscular apparatus or loss of tone in the elastic parenchyma, or whether, in addition to these factors, there has been occlusion of bronchioles and alveoli by certain products of congestion and inflammation, still remediable and removable, such as engorgement of vessels, effusion, accumulation of products of abnormal secretion and catarrhal desquamation, and even new formed congeries of immature cells.

Secondly, by reason of increased expansion, a greater amount of air containing necessary oxygen enters the lungs and comes in contact with a greater extent of blood surface, and this under a moderate pressure which, to some extent, facilitates both gaseous exchange and combination of hæmoglobin with oxygen.

Thirdly, by pressure effects upon the heart and vessels, both the volume and activity of intrapulmonary circulation are increased, resulting in the exposure of a still greater number of corpuscles to the increased volume of oxygen, and in increased nutrition of the pulmonary tissues; and, from similar effects upon peripheral circulation, the ultimate penetration of blood into all the tissues, with tissue respiration, is stimulated and increased. If we add to these demonstrated effects what is theoretically probable, that the production and absorption of lymph and chyle, and the functional activity of the abdominal viscera in general, are increased by the pressure exerted upon them by the diaphragm, we can see what a powerful stimulus, alike to general nutrition and to its individual processes, is afforded by this simple expedient.

Fourthly, pulmonary ventilation is increased. That is to say, not only is a greater amount of oxygen inhaled and absorbed, and a greater amount of carbonic acid given up and exhaled, with each act of respiration; not only does the vivifying current of inspired air finally penetrate into all the disused and clogged recesses; but the foul materials which accumulate in such disused areas are reached and expelled; thus cleansing and purifying the respiratory surfaces and averting the dangers of auto-intoxication from absorption of the products of putrefaction; and also tending to prevent whatever further dangers may be liable to arise from the cultivation upon these products of the bacillus of Koch.

This applies not only to gaseous, but to what may be called circulatory ventilation, and its benefits, especially in the apices in early cases, cannot be overestimated.

Fifthly, the depth and regularity of the respiratory act; the exercise to the muscles of respiration thus afforded; together with the stimulus to and regulation of the action of heart and vessels; produce a general tonic effect upon the nervous and muscular apparatus of respiration and of circulation, and institute an improved habit in the performance of these functions, which tends to maintain and increase all collateral benefits.

Through these local effects, and the general effects already alluded to as obviously resulting, we are enabled to apply with greater efficiency, the measures designed especially to improve general nutrition. For not only do we get rid of a portion of the depressing influences which are factors in the production and maintenance of the disease, but we are enabled to overfeed our patient with a certainty that the food given will be utilized, and that the waste products will be largely burned off, without giving rise to irritating or toxic products of imperfect oxidation. In other words, we stimulate all the processes of metabolism, both constructive and destructive, from the digestive canal onwards, and thus directly improve both organic harmony and cellular nutrition. In addition, we are able, when this measure is indicated, to administer blood-improving remedies, such as iron and arsenic, in greater quantities and with better effect.

It is unnecessary to detail the history of cases treated upon the principle of improving nutrition by proper alimentary and respiratory food, supplemented and aided, of course, by such other treatment, medicinal and hygienic, as general principles and individual conditions may indicate. It does not revive the dead, it does not restore lost tissues; but in no case has it failed to secure to the patient greater comfort and more or less prolongation of life; in early cases it has secured perfect recovery, and even in a few far advanced cases has put the patients into such good nutrition, despite the presence of large pulmonary cavities, that they, if not their physician, have for some years considered that cure was effected. One such case, of recent date, being fresh in memory, I may quote as an illustration: that of a lady aged 28, whose brother and sister had died of pulmonary consumption, whose father and mother had both lost numerous relatives by the same disease. When she came under observation, in September last, she had been sick for two years. There was great consolidation of the upper portion of the right lung, with a large, moist cavity in the middle; and there was some consolidation of the upper half of the upper lobe of the left lung, with an area of softening apparently the size of a silver dollar detectible posteriorly. Cough was troublesome, the sputum being nummular. Indigestion was apparently pronounced. There was an afternoon temperature of 101.5°. The patient was feeble. Her weight was 107 pounds.

Last month she returned to her home weighing 136½ pounds, without fever or cough, with perfect digestion, and feeling strong and vigorous. The cavity in the right lung remains, but is dry. There is no evidence discernible of softening in the left lung. The area of condensation is diminished, leaving on the left about three fingers' breadth of moderate dulness, and on the right about five fingers' breadth of marked dulness, interspersed with some small scattered areas of resonance. I do not look upon this as a complete recovery, but it gives a prospect of years of comfortable life, at home, and not in expatriation, to one who had been told by an eminent authority some months previous to my first acquaintance with her, that her case offered but little hope of improvement.

Since coming to Newport I have received a letter from this patient, stating that in the last month she has gained six pounds additional. She continues to follow the diet advised and to use the compressed air apparatus.

If I may repeat words I have elsewhere used, let me earnestly affirm, in conclusion, that as the ancient orator declared the three essentials of eloquence to be "action, action, and action," so may the therapeutist of to-day declare the three essentials of the treatment of consumption to be —not microbicide, but—NUTRITION, NUTRITION, and NUTRITION.

EPICYSTIC SURGICAL FISTULA, FOR THE RELIEF OF VESICAL CATARRH.

Read by Title in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889

BY JOHN D. S. DAVIS, M D.,
OF BIRMINGHAM, ALA

The treatment of vesical catarrh by suprapubic drainage, irrespective of the causes producing the disease, is not only the most rational, theoretically, but the most available and successful. Such has been the palliative, restorative and curative effect of suprapubic drainage in cases of suppurative cystitis that I have treated by this method, that I have repeatedly resorted to it, with the happiest results.

A close observation of my cases, though at first giving me much anxiety and apprehension, taught me the valued lesson of suprapubic drainage in cystitis. The epicystic fistula gives a desirable continuous drainage, I have not been able to get by any other method. The fistula possesses the ability, through the recti muscles, and a possible pseudo-sphincter, to control the urine at all times. The pseudo-sphincter muscle is formed, no doubt, by the fibres of the detrusor urinæ.

I have tried drainage of the bladder by perineal incision, in the treatment of vesical catarrh; but in no instance did I get such results as in the cases treated by a direct opening into the bladder above the pubis.

September, 1888, I was called by a physician friend, Dr. J. C. Dozier, to see a patient with him. The man, Mr. B., had retention of urine from an impassable stricture of the urethra and enlarged prostate gland. I aspirated his bladder of 2½ pints of alkaline urine, containing pus and mucus. The patient was able to pass a very small stream of urine the next day and would not be operated on for the relief of the stricture. Three months later I was called to see him, and found him suffering from extravasation of urine into the scrotum as the result of an unsuccessful attempt to draw his urine the day previous. The contusion, puncture, etc., resulted in an extensive extravasation into the scrotum, perineum, and above the pubis. I found him with a severe chill, temperature 106°, and pulse 140 I feared extravasation into the peritoneal cavity and suggested to the family the possibility of having to open the peritoneal cavity at once. I, however, resorted to draining the bladder above the pubis. Seven days after the suprapubic puncture I performed internal urethrotomy for relief of penile stricture, and began the treatment of the enlarged prostate by electrolysis. The bladder was irrigated with hot water twice daily for ten days. Electrolysis was used on prostate every third day for ten times, when it was discontinued. The fistula was kept open for thirty days, when it was allowed to close by its own continuity and repair. This was accomplished in about ten days. The man is entirely well and at his business.

Mr. A., æt. 57 years, had been suffering from vesical inflammation for six months. For several weeks before he consulted me he passed his water with much pain. He had rigors and exhaustive night sweats. His temperature would go up for two or three days at a time, and would be followed by two or three consecutive days of only slightly elevated temperature. He had frequent lumbar pains shooting toward the bladder and hip, retraction of right testicle, and tenderness on pressure over the right kidney. Had frequent desire to urinate, with inability to pass his urine. Urethra competent. Prostate gland was slightly enlarged. Urine contained pus and mucus. Average daily amount of urine 39 ozs. After the washing out of the bladder pus would soon accumulate in the viscus, which was conclusive to my mind that pyelitis was causing the progressive emaciation and hectic fever.

Operated for the formation of the direct epicystic fistula for draining bladder and kidney. Bladder was washed out twice daily. Fever subsided on the second day. Patient is entirely relieved from pain; fistula well formed. He returned to his home on the thirtieth day. I hear from him, however, every second day, and he is improving all the time. If the pyelitis had been due to stone in the kidney it would not have disappeared so early. And, too, in such a case the fistula would offer but temporary relief to the bladder only. I am sure he will experience relief so long as he keeps the fistula open and washes out his bladder. By the use of my *epicystic fistula plug*[1] he will have no trouble in keeping the fistula competent. It is possible that he may in one or two years be able to let the fistula close in safety. It should not be allowed to close until every symptom of the disease has disappeared for many months. Specific gravity of urine June 5, 1889 (forty-nine days after operation), 1020, no mucus and no pus.

I was captivated by the enthusiastic reports of Dr. Hunter McGuire,[2] on his coffee-spout fistula for prostatic hypertrophy, and did epicystotomy for the formation of his coffee-spout fistula. Two cases have been reported,[3] with no better results than have attended the direct suprapubic fistula. I adopted the coffee-spout fistula with the view of practicing it, but I am so thoroughly convinced that it does not possess the advantages attending the direct fistula, that I do not think I will ever resort to it again.

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[1] The author's *epicystic fistula plug* is made to fill the fistula within one third of an inch of viscus The plug (which was first suggested to the author by his brother, Dr W E. B Davis), is made of silver or vulcanized rubber and provided with a [illegible] fourth of an inch from [illegible] the skin and held in po[illegible] cles throw the plug out and prevent its retention

[2] Virginia Med Monthly, October, 1888, pp 445-456

[3] Virginia Med Monthly, April, 1889, pp 1-5 Alabama Med and Surg Age, April, 1889, pp 192-195, New York Med Journal, April 13, 1889, pp 416, 417

In prostatic hypertrophy, where there is much distension of the bladder, due to retention of urine, and the bladder is prominent above the pubes, a sufficient opening can be made, by a single plunge of a large trocar or knife, for cystoscopic exploration and the formation of the fistula for intra-vesical treatment and drainage. If nothing more than drainage is necessary, the dread and shock of a technical epicystotomy (by a long incision) may be avoided, by giving the patient the benefit of a fistula in the manner suggested. I have resorted to this measure in cases of very old and feeble men, where I could not administer an anæsthetic, with immediate relief to the patient. In conditions of the bladder where, by reason of a long-standing inflammation of the bladder, the viscus becomes contracted, it is necessary to make an incision through the integument, superficial fascia, muscles and transversalis fascia, sufficiently large to allow the bladder to be opened for intra-vesical ocular exploration and operation.

The technique of the operation for the formation of the epicystic fistula, described in my recent paper[4] before the State Medical Association of Alabama, and published in many of the leading journals of this country, was the result of my enthusiasm over the coffee-spout fistula. My experience with the formation of the direct and coffee-spout fistulæ has taught me that the former is always practicable, as it can be quickly made in cases where an anæsthetic cannot be given with safety, and possesses every advantage attributed to the coffee-spout fistula, and is superior to it in the power to retain and expel the urine, by reason of a better power exerted through the recti muscles near the symphysis.

Hence I consider it necessary to retrace my steps for the better consideration of the direct epicystic fistula, which I have formed for exploration, intra-vesical treatment and drainage, and reconsider it under the following heads:

I. Definition of epicystic surgical fistula.

II. Surgical resources in the formation of the epicystic surgical fistula.

1. Preparation for the operation.
2. Anæsthesia.
3. Position.
4. Incision and opening bladder.
5. Intra-vesical exploration and treatment.
6. Toilet and after-treatment.

III. Advantages of the epicystic surgical fistula.

1. Cystoscopic exploration.
2. Intra-vesical treatment.
3. Drainage.

I. *Definition of Epicystic Surgical Fistula.*—Epicystic surgical fistula is the title here given to a suprapubic fistula into the bladder, created by the surgeon for exploration, intra-vesical treatment and drainage. A fistula which, acting as an artificial urethra, is capable of giving free access to the inside of the bladder for cystoscopic exploration, to provide a ready, convenient and comfortable means of emptying the bladder at will; gives the surgeon a competent opening into the viscus for exploration of ureters; intra-vesical applications; drainage in pyelitis and in pyelonephritis.

It constitutes an essential element in the speedy and complete evacuation of the contents of the bladder in all epicystic operations, and imitates nature in the restoration of its own continuity and repair as the pathological changes within the bladder subside.

II. Surgical resources in the formation of the epicystic surgical fistula.

1. *Preparation for the Operation.*—All hair is to be shaved from the pubes, and all the details of antiseptic surgery are to be carried out so far as cleaning the pubes and abdomen.

Except in those cases of hypertrophy of the prostate gland; paresis and atony; neurosis of the bladder, and in all forms of bladder inflammation accompanied with distension of the bladder into prominence above the symphysis, where immediate epicystotomy, by puncture with a trocar or knife, is necessary, two assistants, though not necessary, may be of valuable aid.

A temperature of 80° or 85° F. should be maintained in the operating-room from the beginning to the end of the operation. The bladder is emptied and thoroughly washed with warm water. When the water returns clean, the bladder is slowly distended with warm sterilized water, thrown in by means of a fountain syringe, with nozzle in urethra—with a degree of pressure sufficient to distend the bladder to its utmost capacity—which can never be too great for the resistance of the bladder. It is better to fail in filling the bladder than to distend the bladder beyond the limit of competency. Indeed, it is not necessary to fill the bladder to any degree of resistance. I have operated when the bladder was in an irritable condition and would not tolerate distension greater than the capacity of 2 ozs., and had no difficulty in avoiding the pre-vesical fold of peritoneum or finding the bladder. The water is secured in the bladder by tying the penis at the base with a rubber tube.

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[4] "Epicystic Surgical Fistula for Cystoscopic Exploration, Intra-vesical Treatment and Drainage," by John D. S. Davis, M.D., April, 1889. Transactions of the State Med. Assoc. of Alabama, 1889; St. Louis Med. Review, May 4 and 18, 1889; THE JOURNAL OF THE AM. MED. ASSOC., May 18, 1889, pp. 685-703; Ala. Med. and Surg. Age, May, 1889, pp. 247-256; Virginia Med. Monthly, May, 1889, pp. 147, 148; Atlanta Med. and Surg. Jour., June, 1889, pp. 204-212; The Amer. Prac. and News, May 11, 1889, pp. 294-298; Times and Register, May 11, 1889, pp. 27-29; Cincinnati Med. News, April, 1889, pp. 217-224; N. Y. Med. Times June, 1889, pp. 87, 88.

A colpeurynter is next to be well oiled and inserted into the rectum—the rectum having been previously emptied by enema—and filled with warm water. This distension brings the bladder into view above the pubis.

2. *Anæsthesia.*—My preference for chloroform is the result of personal experience with it. It is not free from objection, as its depressing effect on the heart is well known. The operation usually occupies from five to ten minutes; and hence its prolonged use would be unnecessary and uncalled for. The objections to ether are the suppression of the excretions, and the frequency with which bronchitis is produced when administered to persons advanced in years. The best course to pursue, when the operation is prolonged, is to follow the use of chloroform by ether.

In old men where there is much distension from retention of urine, due to hypertrophy of prostate, to avoid the dangers of an anæsthetic, I make the fistula by one plunge with a large trocar or with a knife, the shock never being noticeable.

If the operation requires the administration of an anæsthetic, the patient must be kept profoundly under its influence from the first incision until the superficial wound is closed.

Position.—The patient is placed on the back on an ordinary operating table with the legs extended, as if in a position of perfect comfort and rest. Many surgeons claim advantages in the position recommended by Trendelenburg. Eigenbrodt emphasizes the fact[5] that the elevation of the pelvis in Trendelenburg's position[6] helps the surgeon to avoid the prevesical peritoneal fold at the time of the incision of the bladder.

It possesses no advantage over the ordinary flat-back position. With two openings in the bladder for a continuous stream of clear water, every part of the bladder may be illuminated with the electric surgical light, and thus the surgeon is enabled to examine the entire intra-vesical wall. Undoubtedly the position recommended by Trendelenburg possesses advantages which to the author, more than to myself, make it highly ideal. As for myself, I prefer and recommend the flat-back position.

4. *Incision and opening Bladder.*—I have three methods for making the incision, viz.:

a. When the distension is great and no intra-vesical operation necessary, the opening is made with a trocar, withdrawing the stylet and replacing it with a rubber catheter, after the introduction of which the canula is withdrawn, leaving the catheter in the bladder. It is necessary, sometimes, to enlarge the external or cutaneous opening to prevent a closure of the catheter by compression and to render the external opening sufficiently large.

b. The bladder may be opened, when distended, by a direct incision with the knife, in the median line, with cutting edge towards the symphysis pubes. The knife is withdrawn and a catheter is introduced, through the wound, into the bladder.

c. A perpendicular incision, 1 or 2 inches, is made in the median line above the symphysis pubes. The recti muscles are separated to symphysis. If the pyramidalis muscles are in the way, the fibres should be cut. The transversalis fascia is divided on a grooved director from symphysis to upper margin of superficial wound. Instead of following Guyon's manœuvre, I catch the bladder with a tenaculum on a line with the symphysis, through the prevesical fat, and cut through with a bladder knife into the bladder with one smooth, clean incision, to prevent undue disturbance of the cellulo-adipose tissue between the bladder and pubes, and avoid infiltration. I have never seen a case where it was necessary to put up the prevesical fat, and with it the peritoneal cul-de-sac. If the bladder is caught on a line with the symphysis and cut downwards, no fears need be had for the peritoneum. Cutting this prevesical fat prevents its after dropping down over the opening into the bladder, and acting as a valve to prevent easy escape of urine and causing infiltration. And, too, such a procedure gives a smooth incision throughout, and it is almost impossible to have infiltration, even when no drainage tube is left in the bladder, and the urine is left to flow out through the fistulous track and taken up by a layer of absorbent cotton. In making the incision into the bladder, little attention is to be paid to any vein or veins which are sometimes met with. If cut, they will stop bleeding when the bladder is dropped back and the rectal bag removed. The operation is usually bloodless in the sense of hæmorrhage. I have operated without the patient losing more than 1 drachm of blood.

5. *Intra-vesical Exploration and Treatment.*—With the provisions of the puncture or incision the bladder can be examined with the cystoscope and surgeon's light. If tumors be found, if practicable they should be removed; villous growths and any foreign body found should be removed. If nothing is found in the bladder, the fistula, in the absence of malignancy, will be all that is required to remove the cystitis.

Under the provision of the last incision, the finger is carried into the bladder and a thorough search made for any tumors, villous growths, or foreign bodies which should be removed. The rubber around the penis is now untied and the bladder emptied and washed out with hot sterilized water.

6. *Toilette and After Treatment.*—Under the provisions of the last method of making the incision, the bladder is now allowed to drop back into the pelvis, and the superficial wound so

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[5] L. c., p. 72. *Cf.* Lang, Med News, December 4, 1886.

[6] In Trendelenburg's position the patient's legs are held over the shoulders of an assistant with the body resting on an incline table, much in the position in which hogs are hung for spaying.

closed by two or more sutures (including the skin and superficial fascia only), in the upper portion of the incision, as to leave a fistulous track of equal size from the bladder to lower portion of the superficial incision.

A large rubber catheter is now to be introduced into the bladder through the opening, and its distal extremity allowed to enter a urinal placed in the bed between the patient's thighs, or preferably at the patient's side. Prof. F. Trendelenburg, director of the surgical clinic of the University of Bonn, proposed, for draining the bladder in supra-pubic lithotomy, the T tube in latero-abdominal position and open wound treatment as the simplest, safest and best. He makes an antiseptic dressing of iodoform gauze around the T tube. There can be no real necessity for a tube of any kind to be introduced into the bladder for the purpose of conveying the urine from the bladder to prevent infiltration, except in the puncture operation, when it is necessary to let the catheter or canula remain in for a period of six or eight hours, for the formation of the fistula. The smallness of the fistula might be a cause for extravasation, though quite improbable. To prevent irritation of the skin, the urine is kept acid by the administration of citric acid or some other more palatable acid drink. No better antiseptic than the acid urine can be secured for the constant bath of the parts. It should be allowed to flow out through the wound and absorbed by a pad of absorbent cotton placed loosely over the wound, and removed as often as soiled by the outflowing urine. By this method of emptying the bladder, no possible small amount of urine can be impeded in its outflow, which is the case around and outside of the tube when catheter or tube is left in for any length of time—a source of no little annoyance at times. This little collected or retained urine, around the outside of the tube alone, I have seen produce a hard chill and elevation of temperature, and become for the time an immediate, alarming and aggravative source of trouble. I never have seen the skin made sore or chafed by the outflowing urine in epicystotomy, or from its after escape through the surgical fistula.

The bladder should be washed out twice daily with hot sterilized water, by means of a fountain syringe, with its nozzle introduced into the urethra, the water escaping through the epicystic fistula and guided into a bed pan under the patient.

The superficial stitches are taken out at the end of one week, and intermittent catheterization by the fistula is then resorted to, for the sole purpose of training the fistula and to prevent its rapid closure. It is not necessary to catheterize for the purpose solely of drawing off the urine. In some cases I never drew the urine save for the purpose of analysis, but occasionally introduced a rubber bougie or fistula plug to prevent the closure of the fistula. The drainage by the fistula alone is admirable, and the fistula will be well formed in twenty or thirty days, competent to retain urine without dripping and to allow its escape in a good projecting stream at will. With no tearing of the tissues, and with a clean cut, the drainage is perfect and the dangers are *nil.*

III. Advantages of the epicystic surgical fistula.

1. *Cystoscopic Exploration.*—One of the great difficulties in the cystoscopic exploration of the bladder is the presence of pus, mucus and sometimes blood, which renders it exceedingly difficult to maintain a translucency of the fluid used to distend the bladder. By means of a simple fountain syringe a constant current of clear water may be kept within the bladder, so essential to a complete observation of the trigonum Lieutaudii, the most interesting part of the viscus, the ureters, and to examine any affection of that viscus. The fistula may be made for temporary purposes of cystoscopy. Diagnostic purposes are met by the possibility of immediate detection of all local conditions, such as tumors, calculi, foreign bodies, neoplasms, the collection of fluids from the ureters, etc.

2. *Intra-vesical Treatment.*—Having, by means of the epicystic exploration, revealed the true nature of the intra-vesical trouble, the treatment resolves itself into the immediate necessities of the case. For instance, prostatectomy may be necessary; villous papilloma may be found, and should be remedied; pedunculated growths may be found, which should be removed by the scissors, or Paquelin's cautery, etc. In such cases the opening in the bladder sufficient to introduce a finger, should be enlarged downwards under the symphysis pubes, and the operation indicated should at once be performed. The object of the formation of the permanent surgical fistula is to meet the after indications in such operations, the details of which do not properly come within the province of this discussion. However, it is sufficient to state, what is reasonable and practicable, that a better means by which the intra-vesical wall can be reached and treated therapeutically has not yet been devised.

3. *Drainage.*—Permanent after-drainage in all intra-vesical operations cannot be necessary, but it is highly essential to secure good and sufficient drainage until the paravascular tissue is disengorged, the cystitis is relieved and the urine becomes normal and passes per urethra unobstructed. And until this end is obtained, complete artificial arrangement for the escape of the contents of the viscus must be made. In such cases of prostatic hypertrophy or malignant growths, when removal of the obstruction is impossible or contraindicated, the epicystic surgical fistula is clearly indicated and essentially neces-

sary. It meets every possible indication for local treatment and gives the only controllable ready and free drainage to viscus and kidneys. Urinary back pressure, as the result of incompetency of the urethra from the various immovable prostatic troubles, is often an immediate and remote cause of surgical kidney, which can only be removed or relieved by supra-pubic drainage.

It is also indicated in conditions of the bladder of long standing cystitis, where capillary stasis attending the inflammatory process results in paresis. When the urethra is competent, the supra-pubic fistula affords the best means of washing out the bladder in chronic cystitis.

The operation has been performed when the urethra would admit a number 30 (A) sound, simply for the purpose of washing the bladder without the necessity of introducing a catheter twice a day, which causes great irritation in these cases. As stated, with the fistula it is only necessary to introduce the nozzle of a fountain syringe into the urethra, when the water will pass into the bladder and out at the fistula, without irritation to the prostate and bladder, and always with great relief to the patient. The bladder can be washed for hours at a time, when the patient is suffering, with complete relief from all pain.

SCARLET FEVER.

Read in the Section of Diseases of Children at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY C. R. EARLEY, M.D.,
OF RIDGEWAY, PA.

A genus of disease in the class Pyrexia, and order Exanthemata of Cullen. It is an eruptive fever particularly affecting the skin and mucous membranes of the mouth and fauces, and by a majority of writers on the subject is considered as a contagious disease. This I look upon as very doubtful, or at least it has not proved the fact to me in my practice for the last forty-four years. I have known one or more of the same family to have well marked cases of the disease, while others were entirely exempt, and while some families in the locality were every day exposed to it and escaped an attack, other families that prevented their members from going amongst it, when the disease prevailed, or having any communication with those that were sick of scarlet fever, were subject to the disease in all its forms.

The only case I ever saw in which contagion was suggested to my mind was that of a family of four, a man, his wife, and two daughters, residing on a farm about eighty miles north of our town. On the 13th day of January, 1869, he packed his household goods in a two-horse sled and moved for Earley, Elk County, Pa., arriving there on the evening of January 14, 1869. On their way, on the last day, his wife and oldest daughter were taken sick, and on their arrival that evening I was consulted and found them both very ill of scarlatina anginosa. They had moved their family and household goods into a house with a family residing in that town. A few days later his other and youngest daughter was attacked with the same form of disease, and a few days later three children of the family where they were staying were also attacked, two with the same form of scarlatina, and the third case was very severely seized with scarlatina maligna. I at once ordered all clothing and household goods removed to a large farm barn and placed on a scaffold over the threshing floor, consisting of round poles which admitted of free airing, and here every means was used to disinfect all goods and clothing. The house where they were staying was also disinfected, and the patients freely bathed and quicklime placed plentifully in every room. All the cases at once began to improve and were soon well, and not another case was produced in that place. There was no case in the old home from which they had come, before or after their removal. I of course placed this series of cases side by side with the reports of Dr. Rush and others on like cases of yellow fever.

The disease was produced in that family by the condition of the clothing and household goods, that had been stored away in an old, damp and unused room in the house they moved from, where they were shut up from air or light and were filled with mould and dust, and the whole mass of mould, dampness and other filth was packed into boxes and opened upon their arrival in Pennsylvania. Thus those that took them from the boxes in the room at the old home and packed them in the boxes were taken sick with scarlet fever, and all that assisted or looked over the unpacking of the same on their arrival in Elk County, Pa., were also seized with the same disease, and after all these goods were removed to the barn and thoroughly disinfected, not another case existed or was produced, and those that were sick at once recovered; thus showing the cause to be from the condition of the goods unpacked and brought with them and again unpacked without cleansing freely, airing and disinfecting.

In my entire practice I have never known any outbreak of scarlet fever to be produced by any other than local causes. In the country, where the epidemic breaks out in localities where there are no communications with the outside country, where no person has been from home and returned, and no one from other towns and localities has visited, we have in such cases, in my opinion, positive proof that the disease is produced by local causes, especially when, as has always been the case in my practice in the country and small towns and among farmers, lumber camps, mining towns, etc.; at elevations from 750 to 2,350 feet above ocean level, many of the lumber camps being from three to ten miles from any other settlement or towns, the epidemic has been entirely wiped out on thoroughly cleansing, purifying and disinfecting all the surroundings of the house, clothing and all household goods, having all vegetables, fruits, wood, boxes, etc., removed from the cellars; the walls and floor above well whitewashed with good fresh lime and quicklime placed through the cellar and there left to air slack, and quicklime placed in every room and closet of the house and there left to air slack, and lime thrown in all low or moist places about the building outside; also the sulphate of iron in a solution of about 1 lb. to 4 gallons of water used freely in all water closets, sinks, sewers, etc., as a disinfectant.

Medical writers generally divide scarlet fever into four forms: scarlatina simplex, scarlatina sine exanthemata, scarlatina anginosa and scarlatina maligna. I shall, however, consider these all under one general head, as they appear to be different degrees of the same disease, varying in violence as they occur in different individuals, even simultaneously in the same family. I have frequently seen all the forms of this disease at the same time in the same family of several children, probably owing to some peculiar state of the system.

Symptoms.—Scarlet fever generally comes on with the ordinary preliminary of languor, weariness, rigor and pains in the back and limbs. The fever sets in with a frequent pulse, hot, dry skin, flushed face, furred tongue, anorexia, thirst and muscular prostration.

Sometimes there are nausea and vomiting; sometimes headache or other symptoms of disorder of the nervous system, such as restlessness, delirium, stupor, coma or convulsions; sometimes the patient may appear as well as usual one moment, and the next be seized with vomiting with all the symptoms of the primary attack of the disease in the most aggravated form. In fact, the symptoms of this fever are found of every possible grade from the mildest form, scarcely amounting to disease, up to the highest point of violence and danger. Sometimes at the very first and sometimes at a later period, there is more or less irritation or inflammation of the fauces, which have a red appearance and are frequently swollen.

The tongue is coated with a white or yellowish white fur and bright or scarlet red papillæ appear through the surface or coating of the furred tongue, and it is red at the tip and edges (not so in diphtheria). Upon the second, third or fourth day in most cases a rash makes its appearance; sometimes earlier and sometimes later, and not unfrequently there is no rash at all. In such cases we call it scarlatina sine exanthemata. We frequently find the disease in the latter form in families where other members pass regularly through the disease with rash, etc. The rash appears usually first upon the neck, face and breast; then it gradually spreads over the trunk and extremities, but greater diversity exists in different cases in the amount and the arrangement of the eruption; it is sometimes scanty, presenting but a few points here and there, but more frequently it covers the whole body, varying in its color according to the grade of fever present. The eruption is sometimes rough, but generally smooth to the fingers.

The skin is often slightly swollen on the face, hands and feet. The fever continues through the whole course with various degrees of violence. The pulse is usually frequent. I have often seen it varying from 100 to 130 in a minute; it, however, seldom has much force. The skin is dry, very hot and burning.

The bowels are frequently constipated, and again there is more or less diarrhœa from the beginning, and frequently in the advanced stage. The affection of the throat is often slight, and again it becomes the most prominent dangerous symptom. The tonsil and soft palate or uvula are found to be swollen and of a deep red color, and patches of concrete exudations are frequently seen upon the tonsils at an early period. This condition of the throat, tonsils, etc., should in my opinion be treated as diphtheria. The patient can hardly swallow the food and drink, which is sometimes returned from the nostrils; sometimes the condition of the throat is such as to impede respiration more or less. There is always more or less swelling of the external parts in the region of the submaxillary and parotid glands. It appears to be seated more in the cellular tissue, or the lymphatic glands, than either the parotid or submaxillary. Frequently the mucous membrane of the nostrils is swollen so as to nearly close the nasal passage, and in advanced stages of the disease there is an offensive yellow liquid discharged from the nostrils. There is usually a discharge of mucus, etc., from the mouth and fauces, which in advanced cases becomes quite viscid.

The entire duration of the disease is various, terminating by desquamation taking place; sometimes on the fifth day, sometimes the ninth day, and frequently at a much later period.

Prognosis.—The prognosis in this fever is always uncertain. I have frequently known the mildest cases to assume a dangerously malignant character and the patient die very suddenly. We can never consider our patients out of danger as long as there is any appearance of the disease, or the patient is yet debilitated. In my practice in this country in the year 1859, out of over 400 cases only four died in the active stage of this fever, yet six died after they were discharged from treatment and the parents cautioned as to their care, etc. Some died after days and even weeks of treatment, and others were dead before medical treatment could be procured, and many others recovered after a long and severe illness.

Some constitutions appear to be proper subjects for the most violent and fatal forms of scarlatina. I have known many of the same family to die of this fever. One family in Jefferson County, Pa., is reported as having lost eight members of the family of ten children in the month of January, 1860, from scarlatina. Of the particular circumstances of these cases I have not been informed. I think this family might have had diphtheria and not scarlatina. I think, upon the whole, we may be safe in all cases to pronounce it very dangerous, let the case be ever so slight. I have known cases where the parents hardly knew that the children were sick until the sequel of anasarca was observed.

Sequelæ.—Scarlet fever frequently leaves a train of difficulties behind it that are very troublesome. The most common of these affections are anasarca, disease of the eye, bronchitis, enteritis, tonsillitis and abscesses of the submaxillary and parotid glands, etc.; also post-nasal catarrh and granulations of the fauces.

I have found many cases where the patient has been nearly deaf, and others nearly blind also with eruptions over the face, surrounding the nose, eyes, chin and nearly the whole face, caused entirely by the condition in which the throat, tonsils, fauces and post-nasal mucous membranes had been left after scarlatina. Patients who have been treated for a long time, from six months to two years, by specialists for loss of eyesight and partial deafness, and others for these eruptions of the face, etc., and all without effect, have called upon me for treatment, and in every case I could find no disease of the eye, ear or face, but the cases dated from the time of having the scarlet fever or diphtheria and had often existed for years. The kind of trouble in each case was owing to the special location of the irritation of the throat, fauces, larynx or post-nasal regions, and in every case, after full and thorough treatment of these troubles, the patient recovered and the irritation did not return, and this too without the least attention being paid to the eye, ear or face.

In fact these were nearly all the cases I had any trouble with in my practice in the year 1859 in this country in the treatment of over four hundred cases of scarlet fever; as before stated, only four died with the disease, while six died of sequelæ. I will not consider this part of the disease further. Frequently in post-mortem examinations of those who have died of scarlet fever, there can be found but slight morbid appearances, not sufficient to account for the fatal termination of the disease. In many cases where the inflammation and irritation of the throat have appeared to be most severe and distressing during life, the examinations have shown but slight traces.

In the summer of 1829 scarlet fever raged in an epidemic form in the place where I was raised. Every child in the place had the disease. Dr. Lorenzo Dany was the physician who treated all these cases, and my first year's practice of medicine was in the town where the old doctor resided and had retired from practice. He often sat in our office and gave his very interesting experience, and, referring to that scourge of scarlet fever, said that was where he did his last bleeding in scarlet fever, and gave two boys of that town the credit of teaching him better than to bleed in that epidemic. These two boys fought so hard, kicking, striking and screaming, that he could not bleed either of them. Yet, while they were as sick as the worst cases, they both recovered and every case that was bled died, and from that time he never used the lancet.

A cathartic of calomel is recommended by some, and this is objectionable also, as it tends to prostrate the general system too much. I seldom give much in the way of cathartics, as there is so much liability to diarrhœa in the latter part of the disease; and when it is necessary to give laxatives in this fever, the mildest should be resorted to, such as minute doses of castor oil or magnesia. Small doses of ipecac may be given *pro re nata*, but not so large as to nauseate. This may be combined with bicarbonate of soda or creta præparata, as the case may require. Some recommend the use of veratum viride in the stage of excitement, but I have never used it; neither would I permit it in any form or in any of the stages of the disease, and I most emphatically denounce its use. There are found occasionally dark colored exudations covering a dark red or livid membrane, but seldom ulcerations. These last cases may have really been diphtheria, yet we have never seen any of these cases. Concrete exudations are often seen, sometimes extending through the pharynx, even to the œsophagus, but not often into the larynx. These exudations look very much as though they might be considered diphtheria. Various internal organs are more or less congested.

The alimentary mucous membrane often shows signs of inflammation. The appearance is different in different cases. A more thorough investigation is necessary and, it is hoped, will be made. There is no doubt that many cases reported to be scarlet fever were really diphtheria.

Cause.—Writers differ in many respects in regard to the cause of the disease; in fact all are in doubt, and I think further investigation is necessary before we can remove these doubts; therefore, I will say nothing further on the subject.

Treatment.—As to the treatment of this fever, there is as much diversity of opinion as in other things connected with it, and in many cases I think this difference is owing to the locality and season, as the disease appears in varied forms in different seasons and different localities.

In mild cases little or no treatment is required.

The bowels should be looked to and the body sponged with cold water if the surface is hot, and cooling drinks also given. In most cases, however, there should be an emetic of ipecac given in the first stage of the disease, but it should be given with caution. Many recommend blood-letting, but I am decidedly of the opinion that the practice is a bad one; yet, I have never used it in a single case, and in all cases where I have known it to be used it has had a tendency to evil rather than good.

Digitalis is also used and very highly recommended by some. I have used it in but few cases and can not speak from experience, but have no doubt that it would be of great use in some cases; but it should be employed with great care on account of its liability to accumulate in the system, and it should not be used in any case where the action of the heart is weak, or at any other time than in the first stage, or while the pulse is very frequent. The chlorate of potash is much used, and it is a very valuable remedy in these cases in most all the stages, or at least as soon as the excitement is allayed a little. A solution of chlorate of potash, chloride of sodium and bicarbonate of soda should be used freely; oil of turpentine may also be given; and sulphate of quinia may be freely administered in cases inclining to debility. I have frequently given quinia in form of solution with asafœtida and aqua cinnamomi in cases of debility, and always give carbonate of ammonia and also brandy or whiskey in cases of much nervous irritability and debility. The patient should be allowed the free use of cold water and to hold ice in the mouth, if there is much heat and thirst.

Local treatment.—In slight cases a gargle of sage tea, honey or sage tea, and borate of soda is all that may be required; but in a case of any importance a preparation of capsicum, chlorate of potash and chloride of sodium with vinegar and water may be used as a gargle, or the powdered pepper mixed in water or vinegar and put on a sponge or camel's hair pencil and applied to the throat; a solution of zinci sulphas may be used. I have used the myrrh gargle with the best effect. A solution of creosote I have sometimes used with good results, but the very best gargle is chlorate of potash, chloride of sodium, gum acacia and the bicarbonate of soda. When the mouth, tonsils and pharynx are greatly irritated, inflamed or ulcerated, and to prevent the possibility of gangrene, nothing has ever proved as useful in my practice as the use of a mixture of ergotine with camphorated tincture of iodine and glycerine.

℞. Ergotine, 4 scruples; saturated tincture of iodine and saturated with gum camphor, one-half ounce; glycerine, 4 ounces. Use with brush freely *pro re nata:* This preparation can be used locally in nearly any stage of the disease.

A good test of the full course of treatment given above was clearly shown in the spring of 1853, while I was from home some time resting and treating myself for chronic bronchitis. A very severe epidemic of scarlet fever broke out in Kearsey, Caledonia and Weadville, Elk county, Pa., and nearly every case proved fatal. I was sent for to return at once, which I did, and took charge of all the cases. I at once put all the houses and all the surroundings in proper order, disinfected all the houses, clothing and bedding, removed all the surplus clothing, bedding, beds, etc., and had them disinfected and stored for a time out of the houses, and whitewashed all cellars, all outbuildings, fences, etc., also scattered quicklime over the cellar bottoms, and placed a good supply of lime in boxes in every room to air slack, and used the treatment referred to above, as each case indicated. The result was, every patient then sick recovered and no other cases appeared, only in a very slight form. All of which is respectfully submitted.

THE CLINIC.

REGULAR THROAT CLINIC AT CHICAGO MEDICAL COLLEGE, NOV. 30, 1889.

BY W. E. CASSELBERRY, M.D.,
PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS, AND OF LARYNGOLOGY AND RHINOLOGY.

[Reported for THE JOURNAL.]

TERTIARY SYPHILIS OF THE PHARYNX—OPERATIONS FOR NASAL POLYPUS—TECHNIQUE OF ELECTRO-CAUTERIZATION FOR HYPERTROPHIC RHINITIS.

Gentlemen:—Our first patient is complaining of "sore throat," and on examination we find a condition which is so characteristic that, without other history, we are justified in asking him when he contracted syphilis.

One observes deep ulceration in the region of the left posterior pillar, the entere pillar and the neighboring tonsil having been destroyed; also a deep, irregular ulcer on the posterior wall, which is covered with purulent fetid secretion. Near the centre of the velum, at its point of junction with the hard palate, is a gummy tumor, soft and caseous within, and with a small ulcerating surface aperture, through which the probe will pass. A perforation, therefore, already exists, and in a condition to extend rapidly, even perhaps to the point of extensive destruction of the velum and uvula. These are tertiary or late manifestations of syphilis which occur in the pharynx at a period of from one to five years up to any length of time after primary infection. They should be distinguished from the secondary throat symptoms, erythema, mucous patches and superficial ulcers, which appear during the first three months and are liable to continue only through the year.

In this case further interrogation elicits a history of chancre eight years ago, which was followed by typical secondaries, and during the last four years, off and on, by severe throat lesions, the tertiary ulcerations. The tertiary ulcer originates by the formation of a gummy deposit in the depths of the tissue, which, through pressure interference with its own vascular supply, subsequently disintegrates and results in extended loss of substance. The process respects neither cartilage nor bone, and the ravages which certain neglected or virulent cases present, resulting in destruction of the nose, intranasal and pharyngeal structures, are truly appalling. Fortunately the disease is readily controlled by treatment, and potassium iodide for this stage is a specific. We will prescribe large doses for this patient, 60 to 100 grains per diem, for a time, taken in divided doses copiously diluted, on an empty stomach, in order to check at once the destructive gummy infiltration and disintegration of tissue.

Local treatment is of importance in limiting the ulcerative process and in promoting cicatrization. Perfect cleanliness should be maintained by antiseptic and alkaline sprays or washes, and the ulcers touched up daily with a solution of iodine and potassium iodide of each 20 grains in equal parts of water and glycerine to make one fluid-ounce, applied carefully by a cotton swab.

The next patient seeks relief from what he calls "catarrh," a colloquialism which is almost meaningless, for the reason that the symptoms indicated by the term can proceed from a score of different forms and distinct stages of disease, which may affect the upper respiratory tract. In this case the disability is occasioned by nasal polypi, or, more correctly speaking, nasal myxomata, and he suffers in consequence from obstruction of the nose, muco-purulent discharge, headache and aural complications. Reflex phenomena, such as asthma or cough, are not noted, for he has no tendency to bronchitis or emphysema, hence presents no susceptive peripheral point of attack, and his nerve centres are far from being in a superexcitable state, factors which are necessary, in conjunction with nasal irritation, to complete the reflex cycle.

On examination we find in each nostril several soft, elastic tumors, which are smooth in appearance, of a light yellowish or pinkish hue, and movable by the probe. They occupy the space between the middle turbinated body and the lower border of the inferior turbinal, extending over to the septum, leaving the inferior meatus almost clear. They are attached in the middle meatus and can be traced by the probe to the neighborhood of the hiatus semilunaris, from the sharp edges of which they evidently grow. Zuckerkandl, who made post-mortem examinations of some fifty distinct growths, ascertained that the middle meatus furnished the points of attachment in about two-thirds of all cases, and that two-thirds of this number proceeded from the edges of the hiatus semilunaris, a crescentic opening which unites, in the middle meatus, the apertures of the antrum of Highmore and the frontal sinus.

Polypi do not grow in healthy noses, and this patient suffers also from hypertrophic rhinitis, which is the most common cause and complication of nasal myxomata. His turbinated bodies are enlarged and the mucous and sub-mucous tissues thickened. When hyperplasia occurs upon a free edge, as at the hiatus semilunaris, the pendulous position with gravity, among other factors, favors the production of a circumscribed œdema and the transformation of the ordinary hypertrophic inflammatory process into a myxomatous type.

It is an extremely practical point in the radical treatment to be able to judge of the deep point of origin from the superficial position of the neoplasm and the direction of its pedicle toward attachment, as we can then often destroy the very root of the growth by insinuating a properly curved point-electrode to the spot.

This case was exhibited at the clinic on a previous occasion, and each of you had an opportunity to inspect it previous to the operation for to-day. To remove the tumors we may use a variety of means. The old method of "going it blind" with a pair of forceps is obsolete. The nostril is illuminated by reflected light. The instruments which are most in favor at the present time are (1) the cold wire snare and (2) the galvano-cautery snare. The latter has no advantage except the possible avoidance of hæmorrhage for a longer time when it is desired to snare several growths from a nostril at one sitting. The cauterization of the base secured by the hot wire snare is not of sufficient depth to avail in preventing recurrence. For this purpose the cautery point-electrode, deeply insinuated to the bone, must be employed after the cautery écraseur, as well as after the cold snare. In order that both methods may be observed, we will remove the polypi on the right side, in this case, by means of the cold wire snare, and then operate on the left side with the galvano-cautery écraseur.

We use the Allen snare, threaded with piano wire No. 5, an instrument which is so contrived that the wire can be drawn home by the same hand which holds it. Snares which require both hands to manipulate them are unsatisfactory, for the reason that one hand is otherwise needed.

The object is to carry the wire over the polyp and to insinuate it around the base of the tumor at its root, so that in shortening up the wire one may cut as closely as possible to the point of attachment. We have previously sprayed the nostril with a 5 per cent. solution of cocaine. We will, for a few minutes, apply a stronger solution—10 per cent.—upon cotton. Now, having enveloped the mass of polyp by the snare, the nostril being distended bp a self-retaining speculum, we grasp the movable neoplasm with a pair of forceps, to prevent it slipping away from the snare, and even draw it downward, while the loop is pushed upward around the pedicle, which follows into the middle meatus. Thus, we have now removed not only one, but a whole group of polypi at a single snaring, there being five of them, pyriform in shape, making a single mass of perhaps three-quarters of an inch in depth by half an inch in width, all having a common base or stem.

Examined microscopically sections of these polypi would show a few round embryonic cells or anastomosing stellate cells, imbedded in an intercellular substance of mucin-containing serum. Nasal myxomata, however, usually contain enough fibrous tissues to include them, quite strictly speaking, within the class of myxofibromata.

We again spray with cocaine to relieve pain and then immediately cauterize the point of attachment by inserting a point electrode slightly curved on the flat, into the middle meatus and sweeping its white-hot surface over the edge of the hiatus semilunaris. On the left side the polyp, which we will remove by the galvano-cautery écraseur, is further to the rear and more difficult to reach. The instrument consists of a pair of parallel tubes threaded with a loop of steel wire (piano wire No. 5) inserted into a handle which carries a little windlass to wind in the wire. Platinum wire, usually recommended, is not well adapted to the purpose, as it is devoid of resilience, and cannot therefore be pushed between surfaces in contact without destroying the contour of the loop. From the ends of the steel wire which wind around the windlass the temper should be withdrawn by heating. The cords leading over our right shoulder connect the handle with the cautery battery. Otherwise the procedure is the same, and we withdraw thus quite a large myxoma. No hæmorrhage here, such as followed the cold snare on the other side, and we can see to remove another and perhaps still a third neoplasm. The pain attending the operations is not great, the patient, after the application of cocaine, being well able to withstand the necessary manipulations.

A few words in reference to the complications and the method of dealing with them in connection with the polypi. As already said, nasal polypus is not a primary disease, but a neoplasm which ensues largely in consequence of rhinitis. But all individuals with hypertrophic rhinitis are not affected by polypus. As with other neoplasms—sarcoma, fibroma or carcinoma, there may possibly exist a constitutional predisposition of a nature too subtile for demonstration. However, the hypertrophic rhinitis is the chief coexisting factor, stenosis and defective drainage ensue, decomposing muco-purulent secretions are imprisoned especially in the middle meatus, and furnish a suitable soil for polyp growth—a sodden condition of the mucosa which seems to favor the myxomatous form of hyperplasia. Stenosis also results in consequence of septal deviation and excrescences which, acting in conjunction with hypertrophy of the turbinated bodies, may so occlude the nostrils as to prevent the passage of instruments and light to the seat of growth, and the exit of discharges. To effect a radical cure of nasal polypus one must also remove the causes and complications. Septal excrescences should be cut or sawed away, deviation straightened, and the hypertrophied turbinals treated by the galvano-cautery.

This last patient, gentlemen, affords an excellent example of hypertrophic rhinitis—the most frequent of all forms of nasal "catarrh." He complains of obstruction to nasal respiration, which alternates between the two sides, sense of nasal discomfort and pressure headache. All the turbinate bodies are enlarged, the right inferior turbinal at this moment having undergone erection to the point of complete obliteration of the cavity of the nostril.

We present this case solely for the purpose of demonstrating the method of treatment by the electro-cautery just recommended in connection with this disease as a cause of nasal myxomata.

Mild forms of the disorder can be successfully palliated, even cured, by the judicious use of antiseptic alkaline, and warm vaseline sprays, with systemic and hygienic aids. But for marked hypertrophy with stenosis the only satisfactory method of treatment is cauterization. Five per cent. cocaine solution on cotton is placed in contact with the whole length of this inferior turbinate body for five minutes, and meanwhile your attention is invited to the technique of the operation. The knife electrode is commonly used, but we prefer as better adapted to the purpose the ordinary point electrode, which we curve slightly upon the flat, using the surface of the platinum end, and not the very point, with which to burn. This makes a broader eschar than the knife electrode, it is less apt to occasion hæmorrhage, it requires less space in transit through the nostril, and it adapts itself better to the curved contour of the turbinal, permitting application further toward the posterior end of the body.

The cocaine retracts the erectile structures and temporarily provides space through which the unheated electrode is passed, the length of the platinum tip is pressed against the turbinate body, commencing as far posteriorly as one can see, and then, when at cherry-red heat from the battery, it is drawn slowly forward, marking its passage by the production of a white linear eschar.

Through this same linear eschar we now draw the instrument a second and a third time. More than one linear cauterization should not be made at the same sitting, but we have drawn the electrode three times along the same track in order to obtain sufficient depth, as the subsequent cicatrix, in addition to breaking up the free continuity of blood-vessels and substituting a certain overplus of tissue, should serve also to bind down the *neighboring portions by attachment to the bony* base. Bad cases require ten to twelve applications of the cautery, at intervals of one to two weeks, three or four on each lower turbinal and others of less extent on the middle bodies. Antiseptic cleansing sprays should be used during the intervals. The reduction of the hypertrophy will relieve all the pressing symptoms, but it will not remove the inherent tendency toward rhinitis, hence subsequent treatment should be pursued as for simple chronic rhinitis without pronounced hypertrophy.

MEDICAL PROGRESS.

THE STROPHANTHUS PULSE IN HEART DISEASE.—At the International Congress for Therapeutics and Materia Medica, Paris, 1889, BUCQUOI demonstrated the strophanthus pulse by means of sphygmographic tracings obtained from fourteen patients after the administration of strophanthus. The curves show the following peculiarities: The up stroke is higher and steeper and the angle more acute; the pulse resembles the aortic pulse. The increased cardiac action drives the blood more rapidly into the vascular system; the up stroke therefore becomes higher and steeper. The pulse becomes stronger, the number of beats diminishes and the pulsations generally become more regular. Contrary to the views of the physiologists, Bucquoi holds that strophanthus is not an agent that acts directly upon the vasoconstrictors, and that therefore it may be employed with advantage in aortic defects. Upon the whole, the remedy acts immediately upon administration. It may be given for a long time without disadvantage, and its effects are lasting, like those of digitalis, but it should not be given when the heart muscle is greatly weakened or degenerated; in these conditions strophanthus is without effect, *and this* failure of action indicates a grave prognosis.

Lépine expressed the opinion that the increase in the up stroke is caused by an increase in volume of the left side of the heart, which is a symptom constantly observed in experiments upon animals.

Konstantin raised the question whether one is justified in speaking of heart tonics. A true tonic should not only temporarily increase the strength of an organ, but should also lend it strenth to be stored up for subsequent use; such is the action of quinine in malaria. Heart tonics, although they do indeed regulate the pulse and increase its tension, nevertheless weaken its power, and paralyze it quite if the dose is increased or if they are given for too long a time. Their action is rather a supplementary one, affecting the obstacles in the circulation, rather *than a strengthening one, acting upon the heart* muscles. To the category of cardiac remedies which can be administered without injury for a long time belongs also the convallaria majalis, the active principle of which, although as yet unknown, seems to be found in the aqueous extract of the root.

THE ANTIPYRETICS.—PROF. LÉPINE, in a review of progress for 1889, expresses the following opinions relative to the value of some of the antipyretic agents: The study of the antipyretics remains the order of the day, and we have to record the continued success of antipyrin. Its field of usefulness has been extended to include the greater number of nervous affections and its action has proved beneficial in the most dissimilar kinds of cases. If each medicament, as some people affirm, displayed merely the same action in disease as in health, its indications would be sufficiently limited; but with such a remedy as antipyrin, which, upon the whole, is simply a nervine (sedative) of a particular class, the indications are infinite, because an abnormal nervous excitation may produce very different effects, varying according to the part af the nervous system affected, and because whatever these effects may be, a sedative agent, like antipyrin, for example, is capable, at least in certain cases, of removing them, provided it be employed in suitable doses. Thus, I have cured a case of hysterical anuria with antipyrin, although this substance is very far from being a diuretic.

The extensive employment of this useful agent has led to many accidents, not merely those of eruption and fever, but also to other still less expected and perhaps even grave, as, for instance, epileptiform accidents, although antipyrin has been considered a useful remedy in epilepsy; such accidents, however, should not surprise us, for they only confirm what has already been said.

Acetanilid continues to be but *little* employed in France, in spite of its cheapness, and in spite of incontestible advantages which it possesses in certain cases, such as the case with which it is tolerated by the stomach. Furthermore, it relieves pain better than antipyrin. Abroad, where acetanilid is not the object of unjust prejudice, its employment is *increasing*. Its use is also, and I may say especially, attended by accidents, for often sufficient attention is not paid to proper dosage, although, to be sure, these accidents sometimes appear in spite of the greatest precautions. But the fault is not always attributable to the physician, or to the remedy, but sometimes to individual susceptibility—*idiosyncrasy*, as in the case of opium.

It is an incontestible fact that the antipyretics, to an even greater extent than opium, affect the susceptibility of certain nerve structures; thus, I know a lady who has given up antipyrin because of the dysuria and tenesmus which it produces in her case. But coffee produces exactly the same effect in other persons, who are obliged for this reason to abstain from its use.

Of phenacetin one hears but little. It is sufficiently anodyne, is certainly very useful, and has probably come to stay.

I do not think as much can be said of exalgine, which was introduced by Dujardin-Beaumetz and Bardeé. I confess that I have employed it but little, because when I first used it I found that it produced cyanosis, as does acetanilid, and because it did not appear to possess any advantage over the latter remedy.—*La Sem. Méd.*

LOCAL ANÆSTHESIA BY COCAINE.—M. RECLUS regrets that cocaine has not come into more general use. Although it has been pronounced inefficacious and dangerous, the writer has successfully employed it in injections more than 700 times. He finds that *intradermic* injections alone are efficient; cutaneous applications are without effect, while applications to mucous surfaces may sometimes be employed for slight operations. Cocainized injections in the washing out of hydroceles and old hydrarthoses have given excellent results.

As interstitial injections alone possess much value in operations upon the integument, care must be taken that the injections penetrate the skin itself, instead of passing into the subcutaneous cellular tissue. If the parts are very thick it will be well to make several injections, one over the other. Under such conditions anæsthesia is always obtained, and the same is true of inflamed tissues, although this has been denied. The reporter has seen the effects obtained by these interstitial injections continue for an hour, and has been able to perform radical operations without inflicting pain. The bones alone seem insusceptible to this influence. In ano-rectal affections and in the painful operations necessitated by them, the employment of tampons saturated in a 2 per cent. solution and a series of interstitial injections, forming a circle, will secure complete anæsthesia, so that dilatation of the rectum even can be performed painlessly.

The reporter has made 700 injections without accident; he has carefully searched the literature of the subject and has found only four reports of death, and in these large quantities of cocaine were used, viz: 75 centigrm., 1.20 centigrm., 1.25 centigrm. and 1.50 centigrm. Below 75 centigrm. there have been no serious accidents. Such appearances as pallor of the face, shortness of breath, loquacity, tendency to syncope, etc., have been seen, but with ordinary doses, 20 centigrm. or more, accidents are very infrequent. Ordinarily 10 to 12 centigrm. are sufficient.—*Congrès de Chirurgie, 1889.*

EXTIRPATION OF THE UTERUS IN AN AGED PATIENT.—DR. ULLMANN recently exhibited before the Society of Physicians of Vienna a patient 81 years of age, upon whom he had practiced extirpation of the uterus. The patient had suffered twenty years from prolapsus uteri, and for months the lower portion of the organ had been ulcerated. There was also rectocele, with moderate prolapse of the rectum, vesicocele, and slight prolapse of the urethral mucosa. A microscopical examination of the ulcerated surface demonstrated the presence of carcinoma. By reason of the favorable position of the organs and the slight danger of hæmorrhage Ullmann determined to extirpate the uterus. After the operation the bladder and vagina were pushed back and the vagina closed by silk sutures. As a result of cicatricial contraction the vagina was shortened. The bladder and rectum are now in proper place.—*Wiener Med. Woch.*

DETECTION OF ANTIPYRETICS IN THE URINE.—O. SCHWEISSINGER (*Pharm. Cent.*) proposes the following color reactions:

	After the addition of one drop of the perchloride of iron.	After the addition of one drop of concentrated sulphuric acid.
Phenic acid	Blue.	Light yellow . . . .
Salicylic acid	Violet blue	Colorless . . . .
Resorcin	Blue	Yellowish brown . . .
Kairin	Dull, dirty brown . . .	Reddish brown . . . .
Antipyrin	Reddish brown	Colorless . . . .
Thallin	Green	Green . . . .

These reactions are produced especially when, after agitating the urine with ether, the latter is evaporated and the residue treated with perchlorate of iron or concentrated sulphuric acid.

TREATMENT OF ERYSIPELAS.—KOCH (*Wiener Klin. Woch.*) recommends for the treatment of erysipelas the application of an ointment consisting of creolin 1 part, iodoform 4 parts, lanolin 10 parts. This is applied with a bristle brush to the affected portions of the skin and three or four finger-breadths beyond to the healthy appearing portions. In twenty-five cases treated by this method he has observed, after three or four applications, a fall of temperature, limitation of the disease, and blanching of the skin. The after-treatment was also favorably influenced by this treatment.

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THE SURGICAL TREATMENT OF GENERAL PARALYSIS OF THE INSANE.

An examination of the reports of our insane asylums will show the large proportion of cases of general paralysis of the insane among the inmates of these institutions, and treatment has rarely resulted in recovery. Sometimes, as is familiar to the medical officers of asylums, there will be a marked improvement in the mental condition of patients of this class, and the hope is entertained that recovery will follow; but this improvement is usually temporary, and the relapse is a condition worse than before.

A short time ago DR. T. CLAYE SHAW reported in a conservative manner a case of general paralysis with bulbar symptoms, that was seen also by DR. FERRIER, who agreed that the case was fast becoming one of dementia, and that trephining alone afforded hope of relief. Dr. Shaw based his conclusions of the promise of relief afforded by the operation on the fact that pathological appearances indicated irritative processes in the upper layers of the convolutions, with later pressure symptoms; and, as nerve stretching (suspension?) had proved beneficial in ataxia, brain stretching—that could only occur by increasing its space for expansion—would relieve the pressure of the cerebral fluid and diminish the arterial tension that the sphygmograph has shown existent in such cases.

Accordingly, in this case the patient was trephined over the right central sulcus, about two inches outside of the longitudinal fissure. MR. HARRISON CRIPPE operated, making two holes with a trephine and, cutting away the intermediate bone, secured an opening in the skull about one and one-half inches long by three-quarters of an inch wide. The dura mater was then incised and a "considerable quantity" of subarachnoid fluid escaped. By the tenth day the wound had healed, and no cerebral symptoms had been present after the operation. Though there was but slight improvement in the bulbar symptoms, those of *folie de grandeur* no longer existed. The patient was seen by DR. CLIFFORD ALLBUT, who agreed with Dr. Shaw that the man was no longer insane.

Subsequently the distinguished alienist, DR. J. BATTY TUKE, reported a case of paresis that he saw in consultation with DR. MUIRHEAD, in the early stage of the disease. In this case there was a syphilitic history, but the symptoms of intracranial pressure were so marked that the patient was trephined above each parietal eminence. The bone was thicker on the right than the left side, and the dura mater bulged on the former, but not on the latter side. The wound healed by first intention, and for five days the patient's hallucinations ceased and he seemed more rational. At the end of that period the old symptoms returned, and the patient was subsequently transferred to an insane asylum, and when last seen was markedly ataxic and had pronounced dementia. It will be noticed that in this case, that was operated on just a short time previous to Dr. Shaw's, the trephine opening was not so large, nor was any attempt made to drain the dura mater, an omission that Dr. Tuke would have remedied, had the case remained under his care.

If we examine the reasons for the operation we find that we have a disease that is usually fatal, from a destruction of the functional activity of the brain by intracranial pressure. The experiments of ADAMKIEWICZ, NAUNYN and SCHREIBER have shown that slight variations in pressure will cause certain definite phenomena, and it is a reasonable conclusion, that has almost been positively demonstrated by these two cases, that a relief of this pressure will relieve the symptoms in general paralysis of the insane. It is not to be presumed that the connective tissue changes that take place in the vessels and convolutions will be at once absorbed; but the brain is restored to a more nearly normal condition that will probably admit of compensatory changes occurring. The operation, if properly performed, entails but moderate danger to the patient, and it is worth while considering whether even temporary alleviation of the condition is not desirable for the patient as well as for his relatives.

Certain English as well as German alienists have hastened to condemn Dr. Shaw's operation, on theoretical grounds, the Germans even asserting that any permanent benefit is as fallacious as to expect any permanent improvement to follow "wet stretching" of the sciatic nerve for ataxia. But the gentlemen associated in these two cases occupy positions that entitle them to a respectful hearing from the profession, and the operation must be condemned not by theory, but practice.

CORRECT OFFICIAL INSTRUCTIONS AS TO DISINFECTION WITH SULPHUR.

The Kentucky State Board of Health has put forth a circular about contagious disease prevention, which is the first, within our knowledge, that instructs the people how to thoroughly disinfect the sick-chamber, after the recovery or death, or removal of the patient. The circular in question is issued with the intent to prevent diphtheria, that disease having been unusually prevalent in many sections of the State. Its teachings with regard to the rigid observance of the known modern requirements as to fumigations with sulphur are much more accurate than the average board of health directions. They, of course, apply to other communicable diseases besides diphtheria. They are in effect the teachings of the report, of three years ago, prepared by DR. G. M. STERNBERG and his associates on the special committee of the American Public Health Association. In that report the injunction is frequently given that all fumigations by sulphur shall be done "in the presence of moisture." As will be seen in the paragraph given below from the new Kentucky circular, this "moisture" is sought to be provided for by the dampening of the contents of the chamber that is to be cleansed. This circular directs the following procedure:

"To disinfect the room proceed as follows: Arrange the contents of the room so as to expose the greatest amount of surface to the action of the disinfectant. Close the apartment as completely as possible, stopping all openings, as chimney flues, key-holes, etc., through which the gas might escape. *Thoroughly dampen the floor, walls and furniture.* For a room 10 feet square use 3 lbs. of sulphur, moistened with alcohol, in an iron pan placed in a tub containing a few inches of water, to avoid danger from fire. When certain the sulphur is burning well, leave the room, close the door and allow the room to remain tightly closed for ten or twelve hours. Afterward the room should be thoroughly ventilated for several hours, and then the floor, and ledges over windows and doors, and other places likely to retain dust should be washed with the chloride solution and then with soap and hot water. The house and premises generally should be put in the cleanest and best condition possible."

Whether this method is the best and whether it is free from objection, time will demonstrate. There may possibly result from it some bleaching of colored articles by the action of nascent oxygen liable to be generated when the sulphur dioxide comes in contact with wetted goods, and there may be some minor damage beside. We are aware that the method recommended by DR. E. R. SQUIBB, cited on page 448 of the current volume of this journal, calls for a larger amount of "moisture" and directs that it be present in a different form, namely: as vapor of water, produced by boiling, within the apartment, while the fumes of sulphur are in process of liberation. The experience of a hundred health officers and others has demonstrated, as we believe, beyond the peradventure of a doubt, that sulphur has an efficiency excelled by few, if any, of our utilizable chemicals, and it is very much to be hoped that its position as a disinfectant may be strengthened by the adoption of right methods of employing it. For this reason, if for none other, we would call the attention of all those who have considerable dealings with contagious diseases to the new circular of the Kentucky Board of Health, as an improvement upon those which have been disseminated by our authorities during recent years.

CINCINNATI OBSTETRICAL SOCIETY.—Dr. W. H. Wenning has been elected President, Dr. T. P. White, Secretary, and Dr. J. L. Cleveland, Treasurer, of the Cincinnati Obstetrical Society.

THE ASSOCIATION OF THE FUTURE.

No one familiar with the facts, will fail to accord to those who have labored so earnestly for its welfare the full meed of praise so justly their due for the successes which have attended, in the organization and *development* of the American Medical Association in all its past history. But we should be dull students indeed, if in all these forty years since its organization we had not gained some experiences that shall prove valuable with reference to its further development. Our annual meetings have been, to those attending, both pleasing and profitable. During the six years of its existence THE JOURNAL has been an added means in increasing the interest of the medical profession in the welfare of the Association.

But the fact remains, that though a certain number is added each year to the membership, by reason of attendance upon the annual meetings—still the aggregate is not materially increased.

When we appreciate the fact that under wise and timely effort it is possible to combine in one association a very large percentage of the one hundred thousand regular physicians on this continent and to number its membership by thousands, as it now numbers them by hundreds, we are impressed with the conviction that the counsels of our wisest and best men should be summoned to the solution of this important question.

Men of ability, men of culture, may and do find pleasure and profit in their annual meetings devoted to special subjects, and in presenting their valuable papers before a coterie of like cultured hearers.

But what were this in comparison with the reading of those same papers before a thousand listeners who have need of the truths they are so able to express?

Is there not possible a union of all the strong men in the nation for the furtherance of every department of medicine and surgery?

Is it not feasible that an executive committee may so formulate for each meeting a programme, and so designate the persons to participate in the discussions, as to amply reward attendance by the masses of physicians, whatever may be the grade of their attainments?

The Association should forever be divorced from Sectional or personal schemings or personal ambitions. Above and beyond all individual interests it should be catholic in spirit, National in its representation, and grandly representative of the entire medical profession on this Continent.

We invite the candid expression of the matured thought of men who have the welfare of the Medical Association of the future at heart, as to the measures necessary to the accomplishment of these results.

EDITORIAL NOTES.

HOME.

THE DATE OF THE ANNUAL MEETING.—There seems to have been a misapprehension on the part of some members of the Association as to the date of the next annual meeting. This doubtless arises from the fact that the place of meeting governs as to the time when it shall be held. In the Southern portions of the Union the sessions are held in May, while in the Northern States they are convened in June. For special reasons the last meeting was deferred until June 25. Reverting to the established rule, the Association will meet this year at Nashville on Tuesday, A.M., May 20, the third Tuesday in the month.

THE SECRETARY'S REQUEST.—Members of the medical profession who desire to secure special rates for themselves and their families in attending the meeting at Nashville in May, or the International Congress at Berlin in August, will find it for their interest to confer personally with the Secretary of the Association. Address Wm. B. Atkinson, 1400 Pine St., Philadelphia, Pa.

THE BACILLUS OF INFLUENZA.—It is reported that a bacillus has been identified at Vienna as peculiar to epidemic influenza. It has points of resemblance to the coccus of pneumonia, but is not identical with it. It is described as being dark blue in color and having a cassock-shaped head. One writer says that it is not unlike the exclamation point; which, if true, will bring it into the punctuation series of Dr. Koch, who inaugurated that series with the comma bacillus of cholera.

SALUS POPULI.—"The real wealth of a people is not counted by its gold, silver, or broad acres. These are sources of material interest and physical greatness; above these, as high as the heaven is above the earth, as a simpler question of value, is the health of the people. Here is the manhood, the real civilization, the source of its content, happiness, and its good will to men."—Dr. J. W. Jones, in *The North Carolina Bulletin*, January.

THE DAWSON PRIZES.—The annual contest for the Dawson prizes at the Good Samaritan Hospital, of Cincinnati, was entered by a larger number of aspirants than usual. These contests in bandaging, drawing and dissecting are made by the students of the Medical College of Ohio, and excite much rivalry in their respective departments. Five doctors from Cincinnati and vicinity are chosen in each arena to act as judges. They render their decision impartially and hand it to Dr. Dawson in a sealed envelope, which he opens Commencement night, and announces the successful names. The occasion is made a half holiday, with Prof. Dawson as master of ceremonies. A number of speeches are made, interesting cases are shown, and the annual feast winds up the occasion. The students and profession greatly appreciate Dr. Dawson's great-heartedness and liberality.

FOREIGN.

EXHIBIT OF NURSING UNIFORMS.—The medical journal, *Hospital*, has organized an exhibition of uniforms for nurses of over a hundred patterns at the Charing Cross Hospital, London. These are chiefly the uniforms devised and in use in institutions of Great Britain. The various costumes are draped upon miniature figures and are the work of the nurses. The show will probably be so interesting and attractive that it will be made permanent for purposes of reference.

SKIN-GRAFTING FROM THE GREYHOUND.—In one of the London infirmaries a boy, badly burned from knee to ankle on one leg, has been under treatment. Shortly after admission extensive skin-grafting was put in practice, the grafts being taken from a greyhound pup. The skin-strips that were applied to the burned leg were about 6 inches in length and ½ inch in width. They were all united except one, at the end of four days. The patient was discharged cured at the expiration of six weeks after the grafting was practiced.

A NEW SANITARIUM.—The Gilbert Islands may possibly come into prominence as a sanitarium for consumptives, if the reports are true regarding the novelist, Robert Louis Stevenson. These islands, also known as the Kingsmill group, lie in the mid-Pacific waters, and thence has come the report that Mr. Stevenson has found a climate specially suited to his condition, and that he is growing stout.

A HOME FOR CONVALESCENTS.—Sir William Savory has just announced, through the London medical journals, that £100,000 sterling will presently be donated by an anonymons philanthropist for the construction of a convalescents' home near London. Mr. Savory and Mr. Cross, both of St. Bartholomew's Hospital, will be on the Board of Trustees.

THE MEDICAL SICKNESS-RELIEF SOCIETY.—About five years ago there was organized in London a society of medical men for their mutual insurance against sickness and accident and for like purposes. The full title of the company is the Medical Sickness, Annuity and Life Assurance Society, and is indicative of the wide range of self-help designed to be brought within the operations of its charter. It enables young and old, practitioners of every part of the country, to unite in making a mutual provision against the financial calamities of sickness, accident, disablement, chronic disease and death. The cost of running this society is less than 5 per cent. of its income, whereas 18 per cent. is a low average cost for insurance management, according to the authority of the *British Medical Journal;* and this unprecedentedly cheap insurance is effected by reason of its having a Council of management of medical men who serve without charge. The reserve has reached nearly $185,000, and a balance of profit has accrued to the amount of $30,000, the property of the members. The relief which has been extended has been most timely and encouraging in many instances. One member who had contracted a purulent ophthalmia states that he feels that he would have died but for the prompt aid which the Society afforded him, and which made it possible for him to get a change of air and surroundings at a time when he was losing ground constantly and rapidly.

THE RIGID STAATS-EXAMEN.—A late report of the German board which conducts a portion of the Staats-examen inquiries in medicine and surgery, shows that of 683 candidates 504 were rejected, or a proportion of only 26 per cent. of successes.

TOPICS OF THE WEEK.

DIPHTHERIA.

MM. Roux and Yersin have published in the *Annales de l'Institut Pasteur* two memoirs entitled "Contribution à l'Etude de la Diphthérie," in which they minutely describe their methods of research and the results they afforded. The bacillus of diphtheria cultivated in broth renders it acid, afterwards alkaline; in the alkaline state it is excessively toxic in consequence of the soluble products contained in it. These products, used for inoculating guinea-pigs, rabbits, and small birds, produce, according to the dose, acute diphtheria or a chronic septic condition accompanied by characteristic paralysis. A series of experiments made by these investigators show that the bacillus of diphtheria secretes soluble toxic substances. These MM. Roux and Yersin supposed might probably resemble a ferment. They sought to ascertain in the organs of patients dead from diphtheria the presence of the same diphtheritic virus that was detected in the microbe cultivations. The spleen of a child which had died from diphtheria was macerated and crushed in water, then filtered; 8 cubic centimetres of the fluid were inoculated under the skin of a guinea-pig; 30 cubic centimetres were injected into the veins of a rabbit. The guinea pig grew thin and died five days after the injection; the rabbit lived two months; the hind legs became paralyzed. When the diphtheritic virus is filtered away from the cultivation broth it remains intact a considerable time, provided it is not in contact with the air. This virus is most virulent in an alkaline medium; in an acid medium a strong dose is necessary to kill the animals under experiment. MM. Roux and Yersin suppose that the alkaline properties of the cultivation fluid are due to the oxidation of the nitrogenous substances contained in the broth. Cultivations made out of contact with the air are not alkaline. In cultivations two or three months old crystals of ammonia-magnesium phosphate appear. Filtered cultivation fluid mixed with lactic or tartaric acid injected into guinea-pigs, caused slight œdema; a dose of half the quantity in which the acid was neutralized caused death in a short time. The longer diphtheritic virus remains in contact with an acid the weaker it becomes; carbolic and boric acid and borax retard the toxic action but do not arrest it. Introduced into the digestive tract diphtheritic virus does not produce any disturbance even in large quantities. In certain respects this virus appears to resemble diastase, although it does not change sugar nor albuminoid substances. It acts specially on the coats of vessels, causing vascular dilatation, hæmorrhage and œdema, resembling somewhat the action of venom. Animals do not get accustomed to the influence of this virus. This is frequently manifested after inoculation. MM. Widal and Chantemesse, in a series of careful researches on the bacillus of diphtheria, have observed that the solution of Dr. Soulez (de Romorantin), which consists of 5 grams of carbolic acid, 20 grams of camphor, 30 grams of olive oil, does not arrest the cultivation of the bacillus, but renders it slower; nor does the addition of tartaric acid according to M. Gaucher's method increase the antiseptic properties of the solution. These investigators think that this negative result is owing to the presence of olive oil and fatty bodies. Oils are bad sterilizing media, because they do not moisten the cells. Camphorated naphthol has been used with satisfactory results in M. Chauffard's wards in the Broussais Hospital. MM. Widal and Chantemesse in their laboratory experiments found the following mixture the most successful: 25 grams of glycerine, 5 grams of carbolic acid, 20 grams of camphor. The mixture is shaken for ten minutes in a water bath. When cold this mixture separates into two layers—a lower and an upper; the former fluid, the latter white and viscous —a compound of glycerine, phenol and camphor. Silk threads impregnated with the virus of diphtheria were plunged for twenty seconds in this mixture, then washed in alcohol at 95°, and used for inoculating a tube of broth; but the broth remained sterile. Nevertheless, alcohol at 95° does not kill the bacillus of diphtheria. This mixture has not yet been used in treating diphtheria, but MM. Widal and Chantemesse say it is slightly caustic, and adheres to the surface with which it is in contact. It may be applied twice a day to the throat. Every day the throat should be well washed out with a solution of naphthol, or of carbolic acid. In order that the antiseptic agents may come in contact with the mucous membrane, the false membranes should be removed by means of a tampon of wool. Herr Kolisko and Herr Paltauf, in fifty cases of diphtheria, studied in the course of two years' researches on croup and diphtheria, invariably found Löffler's bacillus in every form of diphtheria which fell under their notice. In a case of vaginal diphtheria it was absent. Widal's researches have proved that this form of diphtheria is due to the presence of the streptococcus pyogenes. Löffler's bacillus develops easily in the serum of blood mixed with a quart of nourishing sweetened broth, also in pleuritic effusion mixed with peptone and sugar. Near the false membranes or in the mucous membrane, MM. Kolisko and Paltauf have observed, in addition to Löffler's bacillus, staphylococci and streptococci; in the liver they only observed it once. Inoculations with pure cultivations of Löffler's bacillus only caused inflammation, but the cultivation fluid, passed through a porcelain filter used for inoculation, killed the animals under experiment. Staphylococci and streptococci are inert. Kolisko and Paltauf believe that Löffler's bacillus is the sole cause of diphtheria.—*Brit. Medical Journal*, December 28, 1889.

PERNICIOUS ANÆMIA.

More evidence in support of the view of pernicious anæmia being a hæmolytic process, initiated, probably, by some ferment in the gastro-intestinal tract, and evinced, therefore, most markedly in the portal blood, a view well worked out by Dr. W. Hunter, of Cambridge, has been lately adduced by this observer in a series of papers contributed to the *Practitioner*.[1] The subject matter of his contributions consists in observations on the excretion of pathological urobilin, of blood pigment, and of iron. He made careful analyses of the urine in a typical case of the disease, and draws especial attention to the exceedingly high color of this fluid, although the average specific gravity was never above 1016. Indeed, in the later stages, when the quantity passed was greatest and the specific gravity lowest, this deep coloration was most marked. Such a condition cannot fail to arrest attention, for it is in marked contrast to the character of the urine in other forms of anæmia. The fact, too, has been noted by other observers. Bile pigments were not the cause of the coloration, but spectroscopic examination proved the presence of pathological urobilin, which MacMunn has shown to be distinct from the urobilin of normal healthy urine, and its occurrence was found to be associated with an excessive elimination of bile into the intestine. This increased production of bile pigments indicated an increased disintegration in the liver of hæmoglobin; but Dr. Hunter remarks that not all the "pathological urobilin" could have had this hepatic origin, since at death, when the urine still remained of high color, there was no excess of bile in the duodenum or small intestine. The probability is that other organs also yielded this product of blood destruction, and that some of the pigment in the urine was due to increased absorption from the intestine. Besides this, however, a study of the minute appearances of the kidney in this disease shows an accumulation of pigment granules in the epithelium of the convoluted tubules during life, whilst tube-casts and cells containing such granules may be detected, especially at certain periods of exacerbation of the disease, when it might well be inferred that the blood destruction was more intense. These facts led to an inquiry as to the excretion of iron in the urine in health and disease. Dr. Hunter estimates that the average daily excretion of iron is from 3 to 5 milligrams. It is remarkable that the administration of iron by the mouth very slightly, if at all, increased the amount of iron excreted. Dr. Hunter found in one observation in health the quantity of iron excreted in the urine was 5.65 milligrams; in one case of chlorosis, 1.71 milligrams; in another, 1.96 milligrams; and in a third, 1.61 milligrams, considerably lower than the average, but consonant with the diminished richness of the blood in hæmoglobin characteristic of this affection. In a case of pernicious anæmia, however, the amount of iron in the urine passed about three weeks before death was no less than 32.26 milligrams, twelve days later 6.52 milligrams, and two days before death only 1.00 milligram. It is just ten years ago that Dr. Finny reported a case of pernicious anæmia in which Dr. Emerson Reynolds found a considerable quantity of iron in the urine; but otherwise the observations on this head are comparatively few. Still, such as they are, they harmonize completely with the hæmolytic theory, and are all the more striking when it is remembered how very deficient the blood is in coloring matter during the closing stages of the disease. Dr. Hunter thinks that these three conditions of the urinary pigments—viz: the presence of pathological urobilin, the presence of granules of blood pigment as detected by the microscopical examination of the urine, and an increased excretion of iron—are of importance not only from the pathological standpoint, but also diagnostically. Not, indeed, that such changes are always to be noted in pernicious anæmia, but in periods of its course, periods when the disease is undergoing exacerbation, and which the examination of the blood, as well as the general condition of the patient, prove to be periods of increasing hæmolysis; for pernicious anæmia is seldom—in its earlier stages at least—regularly progressive. Many physicians have had experience of cases in which there was amelioration for a time, followed by a subsequent rapid relapse of the weakness and anæmia; and the irregular pyrexia so characteristic of the affection also seems to denote this liability to exacerbation. The observations he has made regarding urobilin likewise tend to support Dr. Hunter's contention of the blood destruction being initiated in the portal system, and we look forward to his promised further investigations into the nature of the gastro-intestinal changes which he believes to be the *fons et origo mali*, and into the measures to be taken to combat these changes; for if his view be the true one, it is hopeless to expect any other permanently successful method of treating pernicious anæmia than by attacking the disease at its source.—*The Lancet.*

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[1] "Observations on the Urine in Pernicious Anæmia." By Wm. Hunter, M.D. (From the Cambridge Pathological Laboratory.)

ERYSIPELAS.

From a leading article entitled "Facial Erysipelas," by Dr. Geo. T. McCoy, published in the January number of the *Indiana Medical Journal*, we quote the following conclusions:

1. Erysipelas, as it exists to-day, is the same disease, with the same characteristics, as the disease known by the same name in the days of Hippocrates.
2. It is a local disease, with marked constitutional symptoms.
3. It exists only as a traumatic erysipelas, and is a contagious, infectious, parasitic disease.
4. That with the erysipelas cocci are other pathogenic germs, producing, when introduced into the system, their peculiar morbid effects.
5. That the erysipelas cocci, when introduced into the organism, acts by developing a chemical substance known as ptomaine, to which is due the systemic intoxication.
6. Erysipelas and lymphangitis are probably identical, differing only in degree.
7. That in the arrest of the disease the phagocytes play an important part, and are probably the agents by which the organism rids itself of the infectious bacteria, their mode of action not being definitely determined.
8. Attacks of erysipelas may modify the character and development of malignant growths, and in some cases produce permanent cures.

INCOMPATIBLES OF ANTIPYRIN.

An editorial paragraph in the *British Medical Journal* suggests that the liquid extract of cinchona and mixtures of chloral hydrate are not compatible with antipyrin.

The writer in the *Journal* does not assert that the result ot the combination of chloral with antipyrin may not contain the properties of the drugs. A fuller investigation can only determine whether the mixture is potent or inert.

PRACTICAL NOTES.

THE TREATMENT OF INFLUENZA.

M. Henri Huchars, writing in the *Reque générale de Clinique et de Thérapeutique* of Dec. 12, 1889, offers some suggestions concerning the treatment of influenza which may be of interest at this time. "In all epidemics of the disease," he says, "the most marked clinical feature is the adynamic character of the symptoms, and it is against this that treatment should be chiefly directed. For this reason preparations of cinchona, alcoholic beverages, and the like, should be prescribed early; and in grave cases, where the prostration is profound, injections of ether or of caffeine may be needed. Quinine is generally indicated by the remittent character of the fever, and, for the control of this, should be given in one dose of from eight to fifteen grains in the forenoon. If the fever persists in spite of this, it may be well to give fifteen grains of antipyrin in the evening. But even when the fever is not high the use of quinine in tonic doses is advisable. In the rheumatoid or neuralgic forms, characterized by severe pains in the joints, muscles, and other parts of the body, we may resort to antipyrin in doses of fifteen grains two or three times a day. Instead of this drug we may use phenacetin or salol in eight-grain doses. When the disease assumes the broncho-pulmonary form the adynamia is commonly very pronounced, and the necessity for stimulants becomes even more pressing. The nourishment should consist chiefly of milk, which acts as a diuretic, and favors the elimination of the waste products. Blisters are inadmissible in the pneumonia following influenza, which is preeminently a local manifestation of a general disease, for they do not benefit the local process, and only aggravate the general condition. Occasionally the dyspnœa, even when the pulmonary affection is apparently limited in extent, becomes extreme. In this case much benefit is often derived from the use of strychnine. Sometimes, especially in the renal form of the affection, the *only thing that will* relieve the dyspnœa is a venesection, though ordinarily this is the last thing thought of in a disease in which the adynamic tendency is so pronounced. In the gastro-intestinal form it is necessary to employ mild purgatives, such as castor-oil or calomel, and to obtain intestinal antisepsis by means of salicylate of bismuth, or of magnesia, naphthol, etc. If an emetic is at any time indicated, tartar emetic should never be used, but ipecac given in preference."—*Medical Record.*

TREATMENT OF INFANTILE DIARRHŒA.

In a paper on the fermentative diarrhœas in infants, read before the Harveian Society and reported in the *Lancet*, Dr. Luff, while admitting that though probably several irritating substances from the fermentation of milk are factors in the production of the form of acute infantile diarrhœa under consideration, contended that the principal cause was the milk or cheese ptomaine, tyrotoxicon, produced during the fermentation of milk under certain conditions. The treatment of acute infantile diarrhœa with the view of arresting the abdominal intestinal fermentation was then considered. Carbolic acid, creasote, resorcin, salicylic acid, salicylate of soda, naphthol, and salol have been given in the hope of checking the putrefactive changes in the bowels. Ringer has recommended the administration of a weak solution of bichloride of mercury in infantile diarrhœa attended with very slimy stools. Dr. Luff then referred to Illingworth's antiseptic treatment of infantile diarrhœa, which he had himself found most useful, and the employment of which had first directed his attention to the treatment he now employed. This treatment consists in the administration of one-fiftieth of a grain doses of the biniodide of mercury dissolved in iodide of potassium, combined with one-grain doses of chloral hydrate. It was shown experimentally that the soluble biniodide of mercury is an extremely soluble and diffusible salt, and that it possesses the property of combining with and rendering insoluble the milk ptomaine, tyrotoxicon. He has never found that the soluble biniodide of mercury itself acts as an intestinal irritant. Of eighty cases of acute infantile diarrhœa treated by this method, the diarrhœa ceased within two days in seventy-two of the cases; in five of the remaining eight cases it ceased within four days, and in no case did it last over seven days.—*Medical News.*

INTRA-LARYNGEAL INJECTIONS OF MENTHOL IN PHTHISIS.

MR. WALKER DOWNIE, in the Glasgow *Medical Journal*, December, 1889, reports excellent results in the treatment of tubercular laryngitis early phthisis with the intra-laryngeal injections of solutions of menthol in olive oil. To the solution he usually adds pure creosote in the following proportions:

Creasote	2 parts.
Menthol	12 "
Olive oil	86 "

An ordinary hypodermic syringe with a detachable vulcanite laryngeal tube is the most satisfactory apparatus. In administering the injection the laryngeal mirror should be used, by means of which the curved nozzle can be guided into the larynx without coming in contact with the tongue or fauces, thus obviating all risk of retching. The point of the syringe should be just below the vocal cords when the fluid is injected. If the fluid is applied to the cords, it produces a choking sensation, often with spasmodic cough. From twenty to thirty minims should be injected at intervals of a few minutes until a drachm and a half has been used. The patient's immediate sensations are a comfortable warmth throughout the chest, loss of inclination to cough, and disappearance of "tightness" of the chest, if it existed. Cough is often absolutely checked for from four to eight hours. Expectoration is reduced in amount and purulency. The majority of patients gain in weight, and high temperature is often permanently reduced during treatment.

The probable explanation of these effects is that the menthol acts as a local anæsthetic to the mucous membrane of the larynx and bronchi; that it is a powerful, though harmless, stimulant; and that it is an antiseptic which, being very volatile, is rapidly diffused throughout the lung. —*Medical News.*

THE CLIMATOLOGY OF HÆMOPTYSIS.

Dr. Roland G. Curtin, of Philadelphia, in an address before the American Climatological Association, June 25, 1889, tabulates the influence of climate on hæmoptysis under two heads: first, the preventive and curative; and second, the causative:

1. Preventive and curative elements.

Rarefied air arrests the ulceration or other diseased processes and lowers the arterial tension. This greatly overbalances the unfavorable tendency of increased heart action and loss of support to the lungs from diminished air pressure.

Cold air contracts the tissues and blood-vessels, thus preventing a flow of blood when such tendency exists. Its general invigorating effects are beneficial.

Dry air dessicates the pulmonary tissues, decreases the fluidity of the blood, and blocks up the blood-vessels—all favoring the arrest and prevention of bleeding.

Aseptic air favors repair and cure of lung disease, and kills or dwarfs the action of the disease germ.

Outdoor life, when not associated with too much exposure, exertion or fatigue, is beneficial.

Sunshine improves the general nutrition.

2. Causative elements.

Sea level air, by its greater density, diminishes the tendency to hæmoptysis, but the increased arterial tension and the moisture usually present in such localities more than counterbalances the beneficial effect of the support given by the air pressure.

Salt air hastens the breaking down process in tubercular lung disease. The effect is probably good in syphilitic lung troubles, and sometimes in simple chronic inflammatory, non-tuberculous lung affections.

Moist air hastens the ulcerative process, liquefies the blood and secretions, and renders the tendency to the oozing and flowing of the blood more liable.

Warm air relaxes the tissues and blood-vessels and enervates and relaxes the system at large.

Thus he concludes that each case should be carefully studied in all its phases before deciding upon a change of residence. On a high mountain (say from 5,000 to 10,000 ft. [1,550–3,100 metres]), a residence far removed from the sea-coast, is best for a patient with a tendency to hæmoptosis. At a location of this kind one would probably have not only a rarefied, but a cold, dry, aseptic air—factors which would be most beneficial. Care should be taken that the elevation of the patient should be gradual and not too rapid; otherwise the early effects of a sudden elevation might be followed by unpleasant results. A case of syphilitic phthisis will probably be benefited by sea air, while a tubercular patient would be injured by it. —*Satellite.*

CHLORAL HYDRATE IN SCARLET FEVER.

As a rule, the drug is easy of administration, and well borne by the stomach. Wilson says: I have found its acrid after-taste best marked by the administration in Aubergier's syrup of lactucarium, diluted thus:

℞. Chloralis. . . . . gr. xxx.
Syr. lactucarii (Aubergier), ...
Aquæ. . . . . āā ℥iss.

M. Sig. A teaspoonful in iced water every two, three *or four hours.*

The administration of nourishment immediately after the medicine is desirable. The sleep-inducing properties of the drug manifest themselves rapidly, but are not prolonged; therefore, its repetition at intervals of two or three hours is called for—*Medical News.*

SALOL IN GONORRHŒA.

Dr. Dreyfous has treated seven cases of gonorrhœa with salol. The doses varied from five, seven to eight grams. The discharge was less abundant. In a recent case, in which gonorrhœa appeared some time before seeking advice, Dr. Dreyfous obtained a complete cure in a few days. M. Dreyfous has tested the effect of salol administered alone, and in other instances he has given it simultaneously with copaiba and cubebs in order to hasten the cure. He recommends the use of salol to surgeons who operate on the urinary organs; it renders urine aseptic, which is thus innocuous when in contact with raw surfaces. Aseptic and antiseptic conditions result from giving salol internally.—*Brit. Med. Journal.*

SOCIETY PROCEEDINGS.

Allegheny County Medical Society.

Special Meeting, Nov. 19, 1889.

W. F. KNOX, M.D., PRESIDENT, IN THE CHAIR.

[Abstracted for THE JOURNAL.]

CASE OF AMPUTATION AT HIP JOINT.

DR. MURDOCH: This case of amputation at hip-joint I did at the West Penn Hospital on the 28th of August—twelve weeks ago. Recovery from an amputation at the hip-joint is a very rare occurrence in an adult. The operation has been done a good many times. I have performed it several times myself, and this is the first case of recovery I have had. The case is also interesting because of the disease. I have in my hand the femur of the patient who suffered this amputation. It is from a girl 18 years of age, from Beaver county, a native of Pennsylvania. When, last February, she suffered some pains in the upper part of the thigh, she applied to Dr. Simpson, of New Brighton, who recognized an osteo-sarcoma, and brought the girl to me at the West Penn Hospital on the 23d of August. The tumor was then very much enlarged and I amputated at the hip-joint. The disease is, as you see, osteo-sarcoma. It involves chiefly the periosteum, and that is said to be the most malignant type of that disease, more likely to recur than when it attacks the centre of the bone. It has been twelve weeks since the amputation, and the girl is now in perfect health. At the time of the operation she was emaciated, could not sleep without large doses of morphia, and since the amputation she has been in comparatively good health, her pain has left, and there has been no return of the disease in the stump. Amputation at the hip-joint possesses an exceedingly great mortality. So great is the mortality following primary amputation at the hip-joint that of the twelve amputations made in the Crimean war—primary amputations—all died. Previous to our own war, of thirty cases of primary amputations, owing to gunshot injuries, not one survived. The history of primary amputation at the hip-joint in our war is a little more favorable, but not much. There were nineteen primary amputations, and of these eleven died from the shock of the operation within a few hours after amputation; five died within forty-eight hours from other causes, and there were only three who recovered, and only one that was known to be alive two years after the amputation, and that one case I feel particular interest in, as I was the surgeon who controlled the artery at the time of the amputation. This is known in the history of the war as the Shippens case, and was performed on a Pennsylvania private, a young man by the name of John Kelly, who is now living at Black Lick, in this State, in excellent health. This is the only case on record, I believe, that has lived over two years after primary amputation at the hip-joint. Amputations for disease are a little more favorable than for injury, and there are a great many cases of recovery, but still even then it is a very fatal operation. Mr. Lister's abdominal tourniquet has been a great assistance to surgeons in this operation. In the case I report I was able to control the hæmorrhage very effectively by the reliable assistants who assisted at the operation. I will not go into a description of the operation. The girl is now well. I pass this specimen (the tumor and the femur) around among you; it is a beautiful specimen of osteo-sarcoma—one of the finest of which I know.

TINCTURE OF IODINE IN MIDDLE EAR DISEASE.

DR. ALLYN: I would like to call attention to the use of tincture of iodine in the treatment of a species of chronic middle ear disease. To arrest discharge from an ear suffering for any length of time, I have many times been unable, with the use of all applications usually made, powdered iodoform, bichloride, and all the others I could bring into use. Many times the cause of this is the presence in the ear of a substance, whitish, tough, of an aspergillus nature. It has the faculty of reproducing in one night, all that you can remove during the previous day's work. It adheres to the skin and grows very rapidly. I have been embarrassed with several of these cases, trying nitrate of silver up to the 10th per cent. and 20th per cent. applying it to the ears after I had tested the power to bear such strong applications. Under a 2 drachm solution this seemed to thrive. I know the danger of using iodine in the middle ear. A case came to me that had been treated before, and all the applications of bichloride and of nitrate of silver in the strongest degrees failed to make any impression. I mopped the ear in the inner parts with vaseline, protecting it as thoroughly as possible. Then I made a solution of glycerine and tincture of iodine and worked upon the parts exposed, touching only the parts visible.

I succeeded in clearing that ear perfectly leaving not the slightest particle of pus. I did that in two weeks, seeing the patient each day. Another case which had been running through childhood, I succeeded a few weeks ago in stopping the discharge for about a month only. After trying all the other applications which I felt were safe, I resorted to the iodine treatment. After mopping with vaseline I first introduced glycerine into the ear, with no bad results. I then added about a tenth part of the tincture of iodine to it without bad results.

After the operation was made, I filled the ear thoroughly with clear water, followed it with iodoform and it was the last application I needed to make.

NASAL DIPHTHERIA.

Dr. Green: About four weeks ago I was called to see two cases of diphtheria. The family had lost two children, one of them just one week previous. The child had nasal diphtheria; the membranes had grown down so as to be distinctly perceptible. Small membranes on both tonsils. I gave large doses of calomel frequently administered, and made a tampon of absorbent cotton wet with a solution of bichloride of mercury one to a thousand, and plugged the nose as completely as I could. I allowed it to remain about twenty minutes. Before doing this I syringed the nose thoroughly with a solution of borax. I left some of the mercury solution, and told the mother to place the cotton every two hours until my return. The same evening I applied iodoform, reduced with calcined magnesia. On my visit the next day at ten o'clock the membranes had entirely disappeared from the nose. Hæmorrhages occurred infrequently, but there was no reappearance of the membranes. About one week from that time I saw a similar case in a little girl about five and a half years of age. I subjected the patient to the same treatment, and the case rapidly recovered.

Dr. Huselton: Did the membranes from the throat disappear at the same time with the membranes of the nose?

Dr. Green: They disappeared fully within forty-eight hours. I gave large doses of calomel, 10 grs. per hour.

Dr. Davis: I would like to ask Dr. Green for how many hours he kept that up?

Dr. Green: I used mild chloride of mercury in large doses frequently administered. I administered to the first patient I think about 120 grs. in the first twenty-four hours. The membranes from the throat disappeared not as rapidly as the membranes from the nose.

Dr. Lange: I desire to say that I think Dr. Green's treatment very judicious, especially the 10 grs. of calomel per hour. I myself give infants 5 grs. of calomel every hour for three or four hours without salivation, without purgation. This has been so universally my experience, that calomel does not purge in diphtheria, that I sometimes take this as a criterion as to whether I have a case of diphtheria or an aggravated case of follicular tonsillitis. In such cases, where the calomel has purged the patient, I have concluded that I had not to do with diphtheria, because of my universal experience that in diphtheria calomel in 10 gr. doses does not purge nor salivate as a rule. I remember one boy who had nasal diphtheria who received at my hands 1 oz. and a scruple of calomel during ten days and was not purged, not ptyalized, and who recovered.

Dr. Thomas: I would like to state my experience of the calomel treatment of diphtheria. Every case that was malignant and that was at all aggravated died without exception. That is the history of what I saw of this practice with the large doses of calomel.

Dr. Koenig: For my part I desire to commend Dr. Green for the other treatment, perhaps also for the calomel treatment. I think that at the present day no one denies the value of antiseptics in diphtheria, and every one will admit that all of the remedies, with the exception perhaps of some that are recognized at the present time as of no virtue in diptheria, are antiseptics. Calomel itself, I imagine, is beneficial because of its antiseptic properties. No doubt, when these large doses of calomel are administered, more or less of it becomes entangled in the meshes of the membrane. I see no reason why it should not exert its antiseptic properties.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

England as a Health Resort—Pasteur on Influenza—Specimen of a Cardiolith—Agaricin—Surgeon LeQuesne—George Moore, M.D.

Invalids who frequent foreign health resorts, and in winter flock in great numbers to Southern France or Northern Italy, do not seem to be aware that resources are presented in this respect by England. At the present time many people are singing the praises of Cornwall as a winter resort for delicate persons, and a considerable amount of useful and interesting information is to be found in a pamphlet which has recently been issued. Many long years ago the well-known writer, Dr. Paris, called attention to a good many things that appear to be more or less forgotten now, and crop up again as novelties until critics have shown that they were already known. It is sixty years ago that Dr. Paris wrote to the effect that "the very coldest parts of England were less inimical to delicate lungs than the sharp and piercing air of those places, and more particularly Montpellier (fashionable in his day), with its alternating destructive winds; and as regards Nice, though protected from the 'misteal,' yet in the spring of the year it is infested with sharp winds from the east and from the north and southeast, which are highly mischievous to the valetudinarian." It is now claimed for Cornwall by many eminent medical men that not only are its winters the mildest in the kingdom, but that for summer residents there is no purer air than that of the great tract of Moorland which forms its centre and rises to a height of some 1,300 feet, gradually declining westward. The consequence is that January at Penzance is as warm as at Madrid, Florence and Constantinople, while July is as cool as at St. Petersburg in that month.

M. Pasteur, who has just recovered from a severe attack of influenza, has given an interesting opinion on that malady. The physiologist refuses to believe that the influenza microbe has been discovered, and thinks it is impossible to say if the disease was contagious or miasmatic. M. Pasteur, in fact, wants the microbe to be produced, but owing to the malady now afflicting so many persons, neither he nor his fellow-laborers in the laboratory have been able to assist medical men in their researches as to the cause of the epidemic. At the time of writing it is satisfactory to be able to report that there has been a very marked decrease in the number of influenza cases applying for relief at all the large London hospitals.

A most interesting specimen of a cardiolith was shown at the recent meeting of the Pathological Society of London. It appears that the child from which it had been taken was a female aged 5 years, and was seized, seven days before death, with diphtheria. She was for three days under observation, and apparently died of cardiac failure. On opening the heart a hard concretion was found in the eighth ventricle; the other lesions were the usual ones of diphtheria. The mass was situated between the eighth segment of the tricuspid valve and the inner aspect of the part of the cardiac wall forming the eighth border of the organ. It extended from the point of insertion of the valve to the basis of some of the small papillary muscles. In shape it was much flattened and irregularly rhombic, its optical section being tenticular. The longest diameter measured about three-quarters of an inch. The other measurements were, from above downwards, half an inch; from side to side, a quarter of an inch. The surface in contact with the valve was slightly nodulated; the outer surface was smooth, except at four places near the posterior end of the stone, where it was adherent to the endocardium through four short fibrous-looking bands. The cardiolith was of a yellowish-white color and looked like a small piece of bone covered with a smooth, glistening membrane continuous through the fibrous adhesions with the endocardinal membrane. The mass felt hard, but in some parts was distinctly elastic, as if the hardness were due to the presence of a thin shell of bone. The interior was rather soft and granular. On minute examination it was found to be composed of four concentric strata, (*a*) an external layer of luminated endothelium, the superficial layers of that coat being composed of well-formed endothelial cells; the deeper layers were less distinct; (*b*) the next coat was much thicker, composed entirely of rounded masses of carbonate of calcium, at places deposited in the midst of luminated fibrous tissue; (*c*) still more internally there was an irregular layer composed of more or less crystalline, transparent masses of phosphate of calcium, mixed with hæmatin and typical crystals of hæmatoidin; (*d*) forming a nucleus there was a soft material partly composed of distinct coarse fibrin filaments mixed with much granular débris, all much acted upon in weak hydrochloric acid; some pigment was also found in the nucleus. From this structure it was argued that the concretion was a cardiac thrombus or polypus partly calcified, adherent to the cardiac wall and covered with endothelium.

Agaricin, the active principle of the fungus known as agaricus albus, has been attracting more attention again lately. In doses of one-twelfth to one-sixth, or occasionally even one-fourth of a grain, it is very effective in diminishing excessive cutaneous and pulmonary secretions, and as a means of checking diarrhœa and relieving dyspepsia. In the treatment of night sweats of phthisical patients agaricin is found of the utmost value. Decidedly astringent, and acting as an intestinal tonic in small doses, it reverses this action and produces a powerfully purgative effect whenever such doses are materially exceeded, and with individuals of special idiosyncracies even one-eighth or one-twelfth of a grain may prove too much. Doses of one-twentieth of a grain repeated pretty often and administered with a little Dover's powder are then found most useful. Given conjointly with pure terebene, excellent results are stated to have been obtained, and there appears to be good grounds for according to agaricin a systematic trial.

The new Infectious Diseases Notification Act is being adopted generally by the various sanitary authorities of the country. The corporation of the city of London has just given the necessary statutory notice of its adoption in respect of the port of London. By one of its sections the provisions apply not only to houses, but to every ship, vessel, boat, tent, barn, shed or similar structure; consequently all cases of infectious disease occurring on any ship lying within the district of the port will have to be reported at once to the Medical Officer of Health.

It is stated that the Council of Kings College, London, are about to confer the distinction of an honorary fellowship upon Surgeon Le Quesne, formerly a medical student of the college, and recently the recipient of the Victoria Cross for "conspicuous bravery and devotion to duty" under fire in British Burmah.

The profession has just heard with regret of the death, at the comparatively early age of 56, of George Moore, M.D., of Hertford street, Mayfair, after a short illness. Twenty years ago he came to London as a specialist in throat and chest affections. Her Royal Highness, the Princess of Wales, whom he attended, has expressed her deep sympathy with his family, and great personal regret for the loss of one she had known and valued for many years.

Mr. Justice Stephens has held that delirium tremens caused by drink is free from responsibility for criminal actions. G. O. M.

International Medical Congress, Berlin, 1890.

INVITATION TO THE TENTH INTERNATIONAL MEDICAL CONGRESS.

In accordance with the decision of the Ninth Congress at Washington, the Tenth International Medical Congress will be held at Berlin from the 4th to the 9th of August, 1890.

By the delegates of the German Medical Faculties and the chief Medical Societies of the German Empire, the undersigned have been appointed members of the General Committee of Organization. A Special Committee of Organization has also been appointed for each of the different Sections, to arrange the scientific problems to be discussed at the meetings of the respective Sections. An International Medical and Scientific Exhibition will also be held by the Congress.

We have the honor to inform you of the above decisions, and at the same time cordially to invite your attendance at the Congress. We should esteem it a favor if you would kindly extend this invitation to your friends in medical circles, as way may offer.

We beg to accompany our invitation by a copy of the Statutes and Programme, as also by the list of the intended Sections and their Special Committees of Organization.

Dr. Rudolf Virchow, President.
Dr. von Bergmann,
Dr. Leyden,
Dr. Waldeyer,
Vice-Presidents.
Dr. Lassar, Secretary-General.

All communications must be directed to the General Secretary, Berlin NW., Karlstrasse 19.

REGULATIONS AND PROGRAMME.

1. The Tenth International Medical Congress will be opened in Berlin on Monday, August 4, 1890, and will be closed on Saturday, August 9.

2. The Congress shall consist of legally qualified medical men who have inscribed themselves as members, and have paid for their card of membership. Other men of science who interest themselves in the work of the Congress, may be admitted as extraordinary members.

Those who take part in the Congress shall pay a subscription of 20 marks (£1 stg. or $5) on being enrolled as members. For this sum they shall receive a copy of the Transactions, as soon as they appear. The enrolment shall take place at the beginning of the Congress. Gentlemen may, however, be enrolled as members by sending the amount of their subscription to the Treasurer[1] with their name, professional status and residence appended.

3. The object of the Congress is an exclusively scientific one.

4. The work of the Congress shall be discharged by eighteen different Sections. The members shall declare upon enrolment to which Section or Sections they intend more particularly to attach themselves.

5. The Committee of Organization shall, at the opening sitting of the Congress, suggest the election of a definite Committee (or *Bureau*), which shall consist of a President, three Vice-Presidents, and of a number—as yet undetermined—of Honorary Presidents and Secretaries.

At the first meeting of each Section a President and certain number of Honorary Presidents shall be elected; these latter shall conduct the business of the Sections in turn with the Presidents.

On account of the different languages employed, a suitable number of Secretaries shall be chosen from among the foreign members. The duties of the foreign Secretaries shall be confined to the sittings of the Congress.

After the termination of the Congress the editing of the Transactions shall be carried out by a Committee specially appointed for this purpose.

6. The Congress will assemble daily, either for a general meeting or for the labors of the different Sections.

The general meetings will be held between 11 and 2 o'clock. Three such meetings will take place.

The time for the sittings of the various Sections will be fixed by the Special Committee of each Section, it being understood, however, that no such sittings are to take place during the hours allotted to the general meetings.

Joint sittings of two or more Sections may be held, provided that the Bureau of the Congress can offer suitable rooms for such sittings.

7. The general meetings shall be devoted to

a. Transactions connected with the work and general management of the Congress.

b. Speeches and communications of general interest.

8. Addresses in the general sittings, as well as in any extraordinary meetings which may be determined upon, can only be given by those who have been specially requested by the Committee of Organization.

Proposals relative to the future management of the Congress must be announced to the Committee of Organization before July 1, 1890. The committee shall decide whether these proposals are suitable to be introduced for discussion.

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[1] Treasurer's address: Dr. M. Bartels, Berlin SW., Leipzigerstrasse 75. Please to enclose a visiting-card.

9. In the sittings of the Sections, questions and problems will be discussed which have been agreed upon by the special Committees of Organization. The communications of those appointed by the committee to report on a subject shall form the basis of discussion. As far as time allows, other communications or proposals proceeding from members and sanctioned by the Committee of Organization may also be introduced for discussion. The bureau of each Section decides as to the acceptance of such offered communications and as to the order in which they shall come before the meeting, always provided that this point has not been already determined in the sitting itself by a decree of the Section.

Scientific questions shall not be put to the vote.

10. Introductory addresses in the Sections must as a rule not exceed twenty minutes in length. In the discussions no more than ten minutes are allowed to each speaker.

11. All addresses and papers in the general and Sectional meetings must be handed over to the Secretaries, in writing, before the end of the sitting. The Editorial Committee shall decide whether, and to what extent, these written contributions shall be included in the printed transactions of the Congress. The members who have taken part in the discussions will be requested to hand over to the Secretaries before the end of the day, in writing, the substance of their remarks.

12. The official languages of all the sittings shall be German, English and French. The regulations, the programme and the agenda for the day will be printed in all three languages.

It will, however, be allowable to make use of other languages than the above for brief remarks, always provided that one of the members present is ready to translate the gist of such remarks into one of the official languages.

13. The acting President shall conduct the business of each meeting according to the parliamentary rules generally accepted in deliberative assemblies.

14. Medical students and other persons, ladies and gentlemen who are not physicians, but who take a special interest in the work of a particular sitting, may be invited by the President or be allowed to attend the sitting by special permission.

15. Communications or enquiries regarding the business of separate Sections must be addressed to the managing members thereof. All other communications and enquiries must be directed to the General Secretary, Dr. Lassar, Berlin NW., 19 Karlstrasse.

SPECIAL SECTIONS—COMMITTEES OF ORGANIZATION.

Anatomy.—Fleming, Kiel; Hasse, Breslau; Hertwig,[2] Berlin, W., Maassenstr. 24; His, Leipzig; v. Kölliker, Würzburg; Kupffer, München; Merkel, Göttingen; Schwalbe, Strassburg; Wiedersheim, Freiburg.

Physiology and Physiological Chemistry.—Bernstein, Halle; du Bois-Reymond,[2] Berlin, W., Neue Wilhermstr. 15; Biedermann, Jena; Heidenbain, Breslau; Hensen, Kiel; Hüfner, Tübingen; H. Munk, Berlin; Hoppe Seyler, Strassburg; Voit, München.

General Pathology and Pathological Anatomy.—Arnold, Heidelberg; Bollinger, München; Grawitz, Greifswald; Heller, Kiel; Ponfick, Breslau; v. Recklinghausen, Strassburg; Virchow,[2] Berlin, W., Schellingstr. 10; Weigert, Frankfurt a. M.; Zenker, Erlangen.

Pharmacology.—Binz, Bonn; Böhm, Leipzig; Filehne, Breslau; Jaffé, Königsberg; Liebreich,[2] Berlin N.W., Dorotheen-Str. 34 a; Marmé, Göttingen; Penzoldt, Erlangen; Hugo Schulz, Greifswald; Schmiedeberg, Strassburg.

Internal Medicine.—Biermer, Breslau; Gerhardt, Berlin; Leube, Würzburg; Leyden,[2] Berlin W., Thiergarten-Strasse 14; Lichtheim, Königsburg; Liebermeister, Tübingen; Mosler, Greifswald; Naunyn, Strassburg; v. Ziemssen, München.

Diseases of Children.—Baginsky, Berlin; Heubner, Leipzig; Henoch,[2] Berlin W., Bellevuestr. 8; Kohts, Strassburg; Krabler, Greifswald; Ranke, München; Rehn, Frankfurt a. M.; Steffen, Stettin; Soltmann, Breslau.

Surgery.—Bardeleben, Berlin; v. Bergmann,[2] Berlin N.W., Alexander Ufer 1; Czerny, Heidelberg; König, Göttingen; v. Lotzbeck, München; Schede, Hamburg; C. Thiersch, Leipzig; Trendelenburg, Bonn; Wagner, Königshütte.

Obstetrics and Gynecology.—Fritsch, Breslau; Gusserow, Berlin; Hegar, Freiburg; Hofmeyer, Würzburg; Kaltenbach, Halle; Löhlein, Giessen; Martin,[2] Berlin N.W., Moltkestr. 2; Olshausen, Berlin; Winckel, München.

Neurology and Psychiatry.—Binswanger, Jena; Emminghaus, Freiburg; Erb, Heidelburg; Fürstner, Heidelburg; Fleschsig, Leipzig; Grashey, München; Hitzig, Halle; Laehr,[2] Berlin-Zehlendorf; Jolly, Strassburg.

Ophthalmology.—O. Becker, Heidelburg; von Hippel, Giessen; Eversbusch. Erlangen; Hirschberg, Berlin; Leber, Göttingen; Michel, Würzburg; Schmidt-Rimpler, Marburg; v. Zehender, Rostock; Schweigger,[2] Berlin N.W., Roonstr. 6.

Otology.—Bezold, München; Bürkner, Göttingen; Kirchner, Würzburg; Kuhn, Strassburg; Kessel, Jena; Lucae,[2] Berlin W., Lützowplatz 9; Magnus, Königsberg; Moos, Heidelberg; Trautmann, Berlin.

Laryngology and Rhinology.—B. Frankel,[2] Berlin NW., Neustädtische Kirchstr. 12; Beschorner, Dresden; Gottstein, Breslau; A. Hartmann, Berlin; Jurasz, Heidelberg; H. Krause, Berlin; Michael, Hamburg; Schech, München; M. Schmidt, Frankfurt a. M.

Dermatology and Syphilography. — Caspary, Königsberg; Doutrelepont, Bonn; Köbner, Berlin; Lassar,[2] Berlin N.W., Carlstr. 19; Lesser, Leipzig; G. Lewin, Berlin; Neisser, Breslau; Unna, Hamburg; Wolff, Strassburg.

Diseases of the Teeth.—Busch,[2] Berlin N.W., Alexander Ufer 6; Calais, Hamburg; Holländer, Halle; Hesse, Leipzig; Fricke, Kiel; Miller, Berlin; Partsch, Breslau; Sauer, Berlin; Weil, München,

Hygiene.—Flügge, Breslau; Gaffky, Giessen; Graf, Elberfeld; F. Hofmann, Leipzig; R. Koch, Berlin; Lehmann, Würzburg; Pistor,[2] Berlin W., v. d. Heydstr. 13; Wolffhügel, Göttingen; Uffelmann, Rostock.

Medical Geography and Climatology (History and Statistics).—Abel, Stettin; Brock, Berlin; Dettweiler, Falkenstein; Falkenstein, Lichterfelde; Finkelnburg, Bonn; Guttstadt, Berlin; A. Hirsch,[2] Berlin W., Potsdamer Strasse 113; Lent, Köln; Wernich, Cöslin.

State Medicine.—Falk, Berlin; Günther, Dresden; v. Hölder, Stuttgart; Knauff, Heidelberg; Liman,[2] Berlin, SW., Königgrätzer Strasse 46 a; Schönfeld, Berlin; Schwarz, Köln; Skrzeczka, Berlin; Ungar, Bonn.

Military Hygiene.—v. Coler, Berlin; v. Fichte, Stuttgart; Grasnick, Berlin; Grossheim, Berlin; Krocker, Berlin W., Magdeburger Platz 3; Mohr, München; Mehlhausen, Berlin; Roth, Dresden; Wenzel, Berlin.

ASSOCIATION NEWS.

Committee on Dietetics.

The Committee on Dietetics invites papers on the subject, to be read at the coming session of the American Medical Association to be held in Nashville, Tenn. Those who accept the invitation will please send their papers, or the titles of the same, to either

E. A. WOOD, M.D., Chairman,
1720 Sarah St., Pittsburgh, Pa.,
or to FRANK WOODBURY, M.D., Sec'y,
218 S. 16th St., Philadelphia, Pa.

Section of Dermatology and Syphilography.

It is desired that all those who intend to read papers in this Section at the next meeting of the Association at Nashville, Tenn., May 20–23, forward titles thereof before February 25, 1890, to

WILLIAM T. CORLETT, M.D.,
333 Prospect St., Cleveland, O.

MISCELLANY.

STERILIZED LINT.—M. Regnier renders lint sterile by heating it to a temperature of 120° C. (248° F.) He had tested the antiseptic value of lint thus prepared in dressings applied after operations of various kinds, with good results. At a recent surgical congress he stated that he considered sterilized lint equal to antiseptic dressings.

THE dengue fever has been epidemic at Smyrna, and has attacked four-fifths of the population of one hundred and fifty thousand.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from January 25, 1890, to January 31, 1890.

Major Johnson V. D. Middleton, Surgeon U. S. A., is granted leave of absence for fifteen days. Par. 9, S. O. 21, A. G. O., Hdqrs. of the Army, January 25, 1890.

Capt. C. N. Berkeley Macauley, Asst. Surgeon, extension of leave of absence granted in S. O. 294, A. G. O., December 18, 1889, is further extended one month, by direction of the Secretary of War. Par. 1, S. O. 22, A. G. O., January 27, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending February 1, 1890.

P. A. Surgeon C. W. Rush, detached from Naval Academy, and placed on waiting orders.

Asst. Surgeon C. J. Decker, ordered to the Naval Academy, February 1.

P. A. Surgeon E. H. Green, detached from the "Alert" and placed on waiting orders.

Medical Inspector G. S. Beardsley, granted extension of leave to April 30, with permission to remain abroad.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, from December 1, 1889, to January 25, 1890.

P. A. Surgeon S. T. Armstrong, assigned to command hospital at New Orleans, La., when relieved at Cleveland, O. January 13, 1890.

P. A. Surgeon S. C. Devan, granted leave of absence for fourteen days. December 21, 1889, and January 16, 1890.

P. A. Surgeon P. C. Kalloch, to proceed to Portland, Ore., for temporary duty. December 21, 1889.

P. A. Surgeon E. Wasdin, granted leave of absence for nineteen days. December 16, 1889, and January 7, 1890.

P. A. Surgeon P. M. Carrington, to proceed to Cleveland, O., when relieved. January 13, 1890.

P. A. Surgeon W. D. Bratton, granted leave of absence for twenty-one days. December 19, 1889.

Asst. Surgeon S. Norman, relieved from duty at New York; to rejoin station, Evansville, and transfer property. January 18, 1890.

Asst. Surgeon J. B. Fattic, to join station, St. Louis. December 19, 1889. Granted leave of absence for thirty days. January 25, 1890.

Asst. Surgeon F. C. Heath, granted leave of absence for eleven days. December 3, 1889.

Asst. Surgeon J. B. Stoner, to rejoin station, New York. December 23, 1889. Detached and directed to report for duty on floating hospital "Stevens" at Baltimore, Md. January 18, 1890.

Asst. Surgeon A. W. Condict, to proceed to St. Louis, Mo., for temporary duty. December 16, 1889. To rejoin station, Louisville, for temporary duty. December 23, 1889.

Asst. Surgeon G. M. Guitéras, granted leave of absence for twelve days. December 16, 1889.

Asst. Surgeon J. C. Perry, granted leave of absence for ten days. January 8, 1890.

CASUALTIES.

Surgeon C. B. Goldsborough, died January 5, 1890.

Asst. Surgeon J. B. Fattic, resignation accepted by the President, to take effect February 28, 1890. January 25, 1890.

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[2] Managing members.

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ORIGINAL ARTICLES.

TOBACCO AMBLYOPIA.

Read in the Section of Ophthalmology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY LEARTUS CONNOR, A.M., M.D.,

OPHTHALMIC AND AURAL SURGEON AT HARPER HOSPITAL AND CHILDREN'S HOSPITAL, AT DETROIT, MICH.

Mackenzie, in his treatise on ophthalmology, first directed especial attention to the fact that, in some persons, tobacco exerted a toxic influence upon the optic nerve.

This view was fully confirmed by the observations of Hart and Wordsworth, published a few years later. Hutchinson followed with several series of cases published in succeeding volumes of the Ophthalmic Hospital Reports. Each succeeding series being studied in the light of the preceding ones, threw an increasing flood of light upon the varying phases of this interesting affection. Krenchell, in 1870, gave us an excellent treatise upon this subject, based upon the careful study of 183 cases observed in Hanson's Copenhagen clinic.

Forster and Leber, in 1868–69, published their method of correcting slight defects of vision by means of the color sense. Bjerrum discovered the value of using slightly different shades of the same color in detecting the slighter degrees of central scotoma. Mr. Nettleship has recorded much original research in the study of this disease; especially are we indebted for his accurate representation of the field of vision with reference to the color sense of its several portions. Numerous other observers in America and Europe have rendered varying assistance in the investigation of tobacco amblyopia. Yet, in spite of all that has been done, ophthalmologists are divided not only upon details, but upon the very existence of this disease. There is scarcely a question upon the opposing sides of which do not stand equally able thinkers and students.

It is important that at the earliest practicable moment a substantial agreement be reached. This can only be done by adding to existing knowledge careful observations as occasion shall offer, and frankly discussing the same. In the hope that a discussion upon some features of tobacco amblyopia, by the members of this Section, may aid in advancing our knowledge, I venture to briefly report some of my own observations, to give a study of several hundreds of cases reported by others, and to present some propositions based thereon for convenience of discussion.

First, is there a distinct affection to which the name of tobacco amblyopia may be fitly applied? Bearing upon the answer to this question I report the two following cases of tobacco amblyopia in teetotalers:

Case 1.—Mr. T. S., æt. 56 years, an Englishman by birth and a florist by occupation, came to me March 19, 1889, complaining of increasing disability to see. He had noticed this for about three months, but for the past month he had been utterly unable to read a newspaper or to see the worms upon rose bushes in his hothouses. The color of the red roses had diminished in intensity till it was a dirty color. To a very annoying degree he mixed up colors in decoration with plants. Yet formerly he had been justly celebrated for his skill and accurate taste. He had always been an indefatigable worker—in the busy season working frequently till near morning and at other seasons reading till midnight or past. His temperament was of the nervo-sanguine variety. Alcohol he had never taken except as a medicine, but for more than forty years he had been a constant smoker. His favorite method was a pipe which was kept constantly filled with the best tobacco. The more he was bothered, the more vigorously did he smoke.

On examination I found the vision of his right eye $\frac{20}{100}$, not improved by any glass. Jaeger he could not read at all. The pupil was small but moveable. Ophthalmoscopic examination showed that the central retinal arteries were very small, otherwise the fundus was normal.

In his left eye the vision was 18-200ths, but in other respects like the right. Before both eyes was a horizontal oval scotoma in which red and green could not be clearly recognized. All small objects placed in this field were indistinct. The surrounding portions of the fields of vision were normal. The tension of the eyes was normal, and in all respects other than those mentioned they were apparently sound.

On special inquiry I found that just previous to years he had smoked two ounces of Cavendish a week. He habitually drank a good deal. The urine was free from sugar and albumen.

He was ordered to stop the use of tobacco, to wear neutral tint glasses, apply a series of blisters to the temples, and take nux vomica, with an occasional purge.

On June 7 his vision had improved to 20-70, and with plus 3 D. he read 2 J. fairly. The hæmorrhage in the left was still visible, but much faded; optic discs paler and less hazy; the right disc was clearer and paler than the left, and on its upper and outer part were some loops of very small dilated vessels. The left disc was paler than the right, and showed marked white thickening of the sheaths of its descending artery and vein.

On July 5, R. V. = 20-50, W. Do. 5 = 20-40, L. V. = 20-30, not improved by glasses. Ophthalmoscopic examination now showed the discs less alike; the right was very pale at its outer third; the patch of small dilated vessels was still present just above the upper edge of the pale part; the left disc was pale all over, unlike the right.

He had almost given up tobacco, but still smoked two cigarettes a day; he continued to drink as much as usual all the time. Just before he was attacked he took cold and for some days took snuff.

In Volume vii, British Ophthalmological Society's Transactions, we find a series of over 200 cases of amblyopia induced by alcohol or tobacco, or both. Five of these were teetotalers, but used tobacco largely and presented the usual phenomena of central amblyopia. Three did not use any tobacco, but drank alcohol largely. These suffered also from amblyopia, but not *central* amblyopia. The other cases used both tobacco and alcohol in varying degrees, and all presented the characteristic phenomena of central amblyopia. These data would seem to indicate that the tobacco rather than the alcohol was the determining cause of the central amblyopia.

Diabetics who smoke, occasionally exhibit all the characteristics of tobacco amblyopia. Is this due to the tobacco, the diabetes, or to a combination of the two causes? I have observed only one such case. The subject was a clergyman aged 45. The diabetes had existed for a couple of years, but his sight had only failed so that he noticed it for about three months. He was an enormous smoker, and an enormous eater of all kinds of food, though a total abstainer from alcohol. On general principles, I insisted on his giving up his tobacco entirely, and governing his appetite within the bounds of reason. This he did while under treatment, and his eyesight greatly improved, though he died some years afterward from diabetes.

From the considerable number of cases on record I select the following illustrations:

Mr. Nettleship (*Ophthalmic Review*, Vol. ii, p. 23, etc.,) reports four cases of central amblyopia without ophthalmoscopic changes, in patients suffering from diabetes.

1. A man aged 40, who had suffered from diabetes for several months. He smoked half an ounce of tobacco a day. Failure of sight had been noticed for one month. Vision in each eye, 20-100, letters J. 4. Under treatment for diabetes, health improved, but not vision. He would not stop smoking.

2. A man aged 38 had suffered from diabetes three or four years. He smoked half an ounce of tobacco daily. Failure of sight had been noticed for five months. Vision in each eye was 5-200, letters J. 14. He died in the country three months later.

3. A male aged 45 had been the subject of diabetes during twenty-one months. He had smoked during the past thirty years three-quarters of an ounce of tobacco daily. He had noticed a failure of sight for five weeks. Vision was 20-100, J. 16. On examination his urine was found to contain sugar.

Nine other cases are referred to of failure of sight with central scotoma in the subjects of diabetes, without ophthalmoscopic changes. Most of the patients were smokers, and some of them great smokers.

In Vol. iii of the same Transactions, Mr. Nettleship reports eleven more cases of central amblyopia occurring in diabetics who were also users of tobacco. The same volume contains seven other similar cases reported by different observers.

From these and other similar cases found recorded in current ophthalmological literature, I found that the central amblyopia occurring in diabetics who use tobacco, always affects both eyes, that the central scotoma in one eye equals in extent and form that in the other. The fields of vision cover a normal area; the scotomata show a diminished perception of green and red, or an entire absence of the power of perception. The failure of sight begins simultaneously in the two eyes. Mr. Nettleship says that no case is upon record of equal central amblyopia as occurring in a non-smoking diabetic. Mooren, Staffan and others have reported so many of these cases of central amblyopia in diabetics that it would seem to be not so uncommon. Doubtless as the attention of the profession is directed to it more generally, additional cases will be recognized.

But, in the light of our present data, it seems fair to conclude that in the amblyopia of diabetics the efficient causative agent is tobacco, the diabetes acting like bad or insufficient food, mental disturbance long continued, etc., etc.

Central amblyopia does occur in women, but much less frequently than in men. I have never seen a case in women who only smoked. Twice I have observed it in women who drank as well as smoked to excess. Hutchinson, out of 108 cases of tobacco amblyopia, found but nine women.. Dr. A. Hill Griffith (*British Medical Journal*, Dec. 13, 1886,) reports seven cases of tobacco amblyopia in women. It is believed by some observers that the slighter grades of this affection would be found more frequently in women were it looked for more generally. Dr. Griffith says that since the test of central visual field for color has been applied to all cases not fully explained by other methods, he has met a surprising number of such cases. The following cases give us the ground for believing that in women there is no peculiarity in the effects of tobacco upon their vision, and no presumption for the belief that they would escape the disease better than men did they use as much tobacco.

Dr. George A. Berry (*Ophthalmic Review*, Vol. iii, p. 103, etc.) reports three cases suffering from tobacco amblyopia.

Case first was a tramp, who had no regular meals, but made enough by her profession to keep her pipe going. The immediate cause of the tobacco poisoning was that she had been worse fed, and consequently more in the habit of smoking during a period of fasting.

Case second was a woman aged 63 who had smoked half an ounce of "twist" daily for forty years. Nine months before she applied for relief she had lost her husband. This had so distressed her that she could not sleep, and though she had not smoked more, she had been unable to obtain a diet so nourishing as previously and hence often smoked upon an empty stomach. At her husband's death she could read newspaper print, but when tested her vision had been reduced to $\frac{20}{200}$.

Case third was an old servant, aged 57, who was known to have smoked for many years, getting up early in the morning to enjoy her pipe undisturbed in the scullery. Her blindness had come on from two to three months previous to the time she was examined, when the vision with plus D. 1.50 S. was 20-100ths. Latterly she had suffered from sick headaches and an irritable condition of the stomach, and frequently took no solid food for days, smoking while the other servants were at their meals. The ophthalmoscopic appearances in all three cases were confined to slight palor of the temporal sides of the discs.

On the other hand it is said that because tobacco amblyopia occurs more frequently in men than in women, is not necessarily due to the fact that women smoke less than men, for, 1st, men are exposed to greater vicissitudes than women; 2d, they indulge more generally and intemperately in free living.

2. It is urged also that other morbid states may induce a similar state of central amblyopia, as exposure to excessively bright light, etc.

3. If tobacco will produce this state of the optic nerve, why is it that out of millions of smokers, and smokers to excess, only a few hundreds of cases of central amblyopia are observed?

4. Again, it is urged that sight does not always grow worse even if the use of the tobacco be continued.

5. It is also claimed that alcohol will produce this peculiar defect of sight, and that the alcohol is the effective agent in all the mixed cases.

But, *per contra*, it seems that we have good reasons for believing in the existence of a central amblyopia due entirely to tobacco; for, as we have seen:

1. It occurs more frequently in men than in women because men smoke more than women.

2. It occurs in those who use tobacco to the exclusion of alcohol and does not occur in those who use alcohol to the exclusion of tobacco.

3. It gradualy disappears when the use of the tobacco is stopped.

4. In cases in which both tobacco and alcohol are used in excess, the stoppage of the tobacco, the alcohol being continued, is followed by an improvement of the sight.

5. In diabetics it occurs only in those who are excessive in their use of tobacco, and either diminishes or disappears when the tobacco is stopped.

Granting the existence of a tobacco amblyopia, where is the seat of its lesion?

Two views in general merit attention. 1. Von Graefe held that there must be a central disturbance to explain the symptoms. In support of this view is urged: the symmetrical distribution and equal degrees of scotomata in both eyes; the absence generally of any pathological changes in the retina or optic nerve; the nature of the color blindness; the frequent toxic origin of the amblyopia; and its curative nature.

2. In opposition to this Leber believed that the central scotoma was caused by a partial neuritis or atrophy of the optic nerve or some anomaly in the blood supply to the layers of nerve fibres. Bearing upon the solution of this question is the observation of the effect of nitrite of amyl upon the sight of a case of central amblyopia by Mr. George H. Powers (*Med. News*, December 4, 1886). He says that in a case in which the vision was reduced to 20-200ths, within five minutes after administering amyl nitrite the vision rose to 20-40ths. This sudden improvement lasts but an hour or so, but it shows that the loss of sight is due to a lack of blood to the central portion of the optic nerve. It does not enable us to say whether this is localized to the optic nerve or whether it is the result of its action upon the large nerve centres. In two instances I have been able to confirm Dr. Powers' observation.

There are other facts that would seem to connect tobacco amblyopia with retro-bulbar neuritis. Thus, Drs. Nettleship and Edmonds (Transactions of the British Ophthalmological Society, Vol. i, p. 124) report the following: A lean, spare man, æt. 50, was seen for failure of sight. All his life he had been a large smoker, and for two years he had suffered from diabetes. After correcting his presbyopia and hypermetropia his vision in each eye was 20-70ths J. 10. There was but slight pallor of the discs and little haze of the surrounding retina. The fields of vision were normal, but each had a central scotoma in which a bright red spot appeared a faint pink. This area was symmetrical in the two eyes. Though he continued to smoke his sight did not become worse previous to death.

Dr. Edmonds examined the optic nerves after death. To the naked eye there was no evidence of disease. There were no changes anterior to the lamina cribrosa. Posterior to the lamina cribrosa on one side of the nerve was found a tract exhibiting the following pathological changes: 1, atrophy of the optic nerve fibres; 2, increase of the nuclei; 3, thickening of the connective tissue trabeculæ and of the walls of the smaller blood-vessels. In the hindermost sections the affected tract was nearly in the centre of the nerve; farther forward about the entrance of the central artery it approached nearly or quite to the surface of the nerve, affecting a patch which on transverse section appeared wedge-shaped, and from the relation of this diseased part to the central artery at its entrance it was certain that the change was chiefly in the temporal half of the nerve. Again, J. Samelsohn (*Ophthalmic Review*, Vol. i, p. 310) gives a full account of a case of central amblyopia that he was able to study both before and after death. On first examination of the patient a diagnosis of alcoholic amblyopia was made, but later, as abstinence from both alcohol and tobacco resulted in no improvement of vision, the diagnosis of retro-bulbar neuritis was made. At first there was only a small relative scotoma for red and green concentric with the fixation point in each eye. Peripherally the fields were normal. Central acuity was reduced to 15-70ths and 15-200ths. The discs were normal. Two months later the scotoma in each eye had increased in size and the perception of blue was impaired also. The disc margins were all slightly hazy and there was severe pain in the head. Two years later the scotomata had increased in size and were absolute for white as well as for colors, the boundaries not being absolutely determinable. Nothing abnormal was discovered in the blind area of the retina. The patient died of valvular heart disease. Microscopic examination after death showed that posterior to their entrance into the optic foramen the nerves and sheaths were normal in all respects. Within the bony canal the sheaths and vessels belonging to it were normal, but the nerve itself was reduced in size and flattened from above downward. Transverse sections from this part of the nerve showed a peripheral ring of healthy nerve substance, and within this an area of hypertrophied connective tissue with great proliferation of nuclei and increase of blood-vessels, together with remnants of destroyed nerve fibres. On the distal side of the foramen the signs of interstitial inflammation gradually subsided and the affected nerve substance presented the signs of ordinary nerve atrophy, showing that the atrophic changes occurring lower down were secondary, and due to the broken continuity.

The damaged nerve fibres were those connected with the blind area of the retina, the region of the macula. By following them down from the optic foramen to the eye the normal course of the macula fibres was obtained.

Thus it appears that, in these cases, the pathological process underlying central amblyopia is an axial interstitial neuritis, originating at the optic foramen, and leading to cicatricial contraction, and secondary descending atrophy of the nerve fibres.

These pathological changes are identical with those found in the optic nerves of persons dying who before death had exhibited the evidences of tobacco amblyopia, by Drs. Lawford and Edmonds, Vol. ii, Trans. Brit. Oph. Society; by W. Uhthoff in Arch. Oph., Vols. xxxii and xxxiii. As all of these observations were made upon persons who had used both alcohol and tobacco to excess and who suffered from other diseases as well, it is impossible to affirm that these changes were wrought by the agency of tobacco. Dr. Wecker and others strongly urge that the pathology of tobacco amblyopia is a retro-bulbar neuritis. Others deny this identity and urge their denial by the following considerations:

1. The scotomata of tobacco amblyopia are invariably identical in size and form in the two eyes. It would seem unlikely that an inflammatory process in separate nerves should in the separate optic nerves pursue such a similar course as to cause such scotomata.

2. It is difficult to see how an inflammatory process in separate nerves should in all stages of the affection produce the same degree of amblyopia in all stages of the affection.

3. It is hard to see how an inflammation in the optic nerves could confine itself so definitely to the impairment of the functions of one set of fibres. This difficulty is increased when we recall the fact that these same fibres occupy different situations in the nerve at different levels between the papillæ and the optic foramen.

4. How is it that both corresponding nerve fibres and their functions are affected in an equal degree in the separate nerves?

5. It is not denied that a retrobulbar neuritis may exist in connection with tobacco amblyopia, but it is not accepted as proven that the two are identical pathological processes.

From the present state of our knowledge it would seem that tobacco amblyopia was essentially a functional disorder. Possibly this functional disorder may induce an organic change, but more observations are needed to establish this view. It seems certain that it induces its effects through the circulation of the optic nerves. Possibly the tobacco may induce the interstitial changes described, or these may be due to quite different causes. In all cases tobacco amblyopia must be regarded as an idiosyncrasy.

The prognosis of tobacco amblyopia is good provided the patient can be induced to stop or suitably diminish the use of tobacco. All the cases I have observed either entirely recovered or were greatly improved. This coincides with the reports of nearly all observers. Mr. Hutchinson (Ophthalmic Hospital Reports, Vol. viii, p. 459, etc.) gives the results of a study of sixty-four cases of tobacco amblyopia several years after they were first seen. He says a recovery or great improvement took place in forty-eight of the sixty-four cases. A complete cure took place in thirty-one cases. In four cases the disease remained stationary. In seven cases the sight became worse while under care. Five were quite blind when first seen, and continued so.

The cases that came under his care quite early got well completely and quickly. Those of long duration were slower in recovering. Of the forty-eight patients who improved, twenty-six ceased smoking entirely for a time, and thirteen others very much diminished their use of tobacco. Of those who left tobacco for a time, six are known to have returned to smoking more or less after recovery of their sight, and in none did the sight again fail. In some cases the quantity of tobacco had been increased before the sight had begun to fail, in others evidences of greater susceptibility to its influence had attracted the patient's attention. Another class had always been intolerant of tobacco. In several of the cases that did not improve there was either an increased quantity of tobacco employed, or disagreement, or habitual susceptibility. In not one of the cases in which the patient improved did he continue to use his full amount of tobacco. Of the eleven patients that did not improve or became worse, eight continued smoking their usual allowance throughout.

Those in the best of health furnish several of the best and quickest recoveries. Several of this class were either total abstainers from alcohol, or practically so.

What should be the treatment of tobacco amblyopia? Some observers claim that in the anæmic forms of this disease strychnia should be administered, and that in cases of congested optic disc the iodide of potassium should be given. Others affirm that the only treatment called for is simple abstinence from tobacco. Our own belief is that each case should be treated according to the indications found. In every case it is desirable that the optic nerve be supplied, at the earliest possible time, with an abundance of good blood. The indications for the use of strychnia and the iodide of potassium are well stated. But the diet and mode of life should be studied, and the condition of the entire body should be rendered normal by appropriate medicine or regulation of habits, etc.

Questions upon which more light is desired:

1. What influence has alcohol upon the causation of central amblyopia?

2. Is it necessary to entirely suspend the use of tobacco in order to effect a cure of tobacco amblyopia?

3. Does tobacco produce atrophy of the optic disc?

4. What relationship, if any, exists between tobacco amblyopia and retro-bulbar neuritis?

5. What relationship exists between diabetes and tobacco amblyopia?

We have endeavored to show that

1. Tobacco has an especial affinity for a central tract in the optic nerves, and may induce central amblyopia.

2. No other single agent has been shown to induce central amblyopia symmetrical in both eyes, in strictly non-users of tobacco.

3. Some special condition or conditions are required to precipitate an attack, as abuse of alcohol, diabetes, excessive venery, starvation, mental shock, or distress, etc.

4. Some individuals seem to have an especial tendency to optic nerve degeneration, and to these the use of tobacco is especially injurious.

5. Clinically central amblyopia is recognized by its sudden development, by the existence of central scotoma for color in both eyes without limitation of the fields of vision, by the absence of any defect of refraction or recognizable lesion to account for the sudden blindness, and by its occurrence only in tobacco smokers.

6. Pathologically, during at least its earlier stages, it consists of an anæmia of the central portions of the optic nerves. Possibly this may, after a longer or shorter time, induce organic disease, but this has not yet been shown in a case of pure tobacco amblyopia.

Its prognosis is good during the earlier stages at least, if properly managed.

7. Its treatment consists principally in withdrawing the tobacco. Other measures may be profitably employed that promote the local nutrition of the eye and the system in general.

103 Cass Street.

Dr. Knapp: The lesion underlying central scotoma, consequently also that of this symptom in toxic amblyopia, is, I think, retrobulbar neuritis. Nobody who has seen the microscopic specimens of Samelsohn and Schöler, will doubt this. Ophthalmoscopically the cases of toxic amblyopia show three varieties according to the stages of the disease. In the first, mild stage, the optic disc looks fairly normal; in the third, last stage there is pronounced general atrophy of the optic disc; in the second stage there is partial atrophy which has a peculiar picture, namely: a triangular temporal atrophy, the white dotted area reaches from the centre to the periphery, the limbs of this triangular atrophy being more or less faded. This very same picture, since my attention was drawn to it by a paper of Sachs' (which will appear in the forthcoming number of the *Arch. of Ophthalmol.*), I have seen it repeatedly quite marked. The very same picture I saw some months ago in one, slightly divergent, eye of a young lady, and when, after dilatation of the pupil, I examined her with the ophthalmoscope, I found an evidently congenital coloboma of the yellow spot. This, I think, is a corroboration of the position of the macular fibres in the end of the optic nerve. These observations have exceedingly interested me, for they enable the ophthalmoscopist to recognize in the living the tissue changes in peripheric neuritis.

DR. CHISOLM, while agreeing with the statement, saw also cases of undoubted tobacco amblyopia where alcohol was not used. He lives in a tobacco growing region and where tobacco is too freely used. A most marked case was one which he had lately reported, that of a lady æt. 40 who had come to him from a distance for treatment. Her bearing and language indicated a person of culture. She said that, being aware that about her age glasses would be needed, she had applied to the optician for aid in vain. Her distant as well as near vision was befogged and she was no longer able to read with ordinary comfort. After a very careful examination ophthalmoscopically and physically he had determined in his own mind that he had to deal with a case of tobacco poisoning, but dared not make the accusation. He however stated that were she a man he could tell at once what was the matter, but in the case of a lady he was altogether at sea. She said at once, "Call me a man and tell me what is the matter." As frankly he said, "You smoke too much." She laughed heartily and said that she did smoke, explaining that she had acquired the habit through persuasion of her husband, who constantly used tobacco. He had also seen cases in ministers who smoked to excess but who abstained from all alcoholic beverages. He had seen one case in which the patient, when accused of tobacco poisoning, laid stress on the fact that he only smoked one-half a cigar a day. Even this small amount made him sick. His amblyopia disappeared when the habit was permanently given up. On previous occasions he had said that he had never seen a case of tobacco amblyopia from chewing alone. Recently he had had occasion to modify this statement, as he had within the past three months been consulted by two gentlemen who did not smoke, but who had long been in the habit of chewing tobacco all day long and only had their mouths empty when at meals and during sleep. These cases show that tobacco alone can produce amblyopia. All got well when tobacco was abandoned permanently.

DR. ADOLPH BLITZ, Indianapolis, Ind.: I remember a case of tobacco amblyopia which occurred in my practice some fifteen years ago. The patient was a woman about 35 years of age, who lived in the mountains of Tennessee, whose vision gradually failed for some weeks, but during the three days before I saw her, she became blind to such an extent that she could only distinguish between daylight and darkness. She could not see to walk and had to be led into my office. I made a thorough ophthalmoscopic examination of the eyes, but as I now remember, found no lesion, and was at a loss to account for the loss of vision. While I turned to speak to her husband and the physician who brought her case to me, I noticed that the woman took from her pocket a small tin box and a little stick, which latter she dipped into the tin box and then carried it to her mouth and chewed it. Alert to anything that I could learn about her habits, I asked her what she had there. She said, "Oh, only some snuff." This was something new to me, as I had never seen snuff thus used before, although I had heard of it. I knew then the cause of her blindness. To my question how much of the snuff she used during the day, she told me, but I do not now remember the quantity, though I remember it seemed to me large. I told her that she must stop the use of the snuff entirely if she wanted to regain her vision, explaining to her that the snuff was the entire cause of her trouble. She did as I told her, and under the use of strychnia and electricity vision returned in about a week, and in about six weeks was entirely restored.

DR. NOYES, of Detroit, said: Dr. Connor's interesting paper just read is one of great importance. Cases of tobacco amblyopia came under my observation early in my practice—but in most cases the victims were hard drinkers, so it was difficult to say to which excess to lay the blame of failure of vision. A typical case of this sort now occurs to me. A middle-aged man from Canada consulted me on account of great failure of vision which had been troubling him for a long time. He was unable to make out the largest letters of Snellen Zeit type. His appearance plainly showed him to be a whisky drinker. In answer to my questions he said he drank heavily and smoked a pipe all the time. His habits had so firm a hold upon him that his case appeared to me hopeless. No examination was made with the ophthalmoscope of his eyes. He was advised to leave off both drink and tobacco.

Two cases also of failure of vision occur to me from excessive use of tobacco. One was a clergyman who had been presented with a very fine meerschaum pipe which he had been smoking almost incessantly in order to color it. With failure of vision he was troubled also with palpitation of the heart with syncope, which greatly alarmed him. Upon following my advice to quit his smoking his vision returned. The other case was a tobacco manufacturer, also of middle age. He was a great smoker of cigars of the best quality, using as many as twenty or thirty daily. His failure of sight led him to consult me. I advised him to give up his cigars and all use of tobacco. His vision at once improved and became normal.

Dr. Myles Standish: Several years ago I reported in detail a case of tobacco and alcohol amblyopia which was followed, as the patient persisted in his habits, by an alcoholic multiple neuritis. At that time I suggested that in all probability the amblyopia was also a peripheral neuritis. Since that time it has been my fortune to see three more cases of amblyopia *ex abusu*, in which the excess was not subsequently moderated, and which about three months later was followed by an alcoholic peripheral multiple neuritis. In two of these cases there was present a very noticeable whitening of the greater portion of the temporal half of one nerve at least. At the time I reported the first case I looked up the literature of alcoholic multiple neuritis and found that in the report of a number of cases reported by Dr. —— in which the eyes were examined, the sight was found diminished, and the note was also made that in several cases the temporal halves of nerves were remarkably white. It is my opinion that cases of toxic amblyopia, whether due to tobacco, alcohol or lead, are undoubtedly a part of a peripheral multiple neuritis which, unless the toxic agent is stopped, may appear in other nerves.

Dr. E. J. Gardiner reported a typical case of tobacco amblyopia occurring in a clergyman, a total abstainer from liquor. The characteristic pallor of the temporal half of the disc was noticed. The patient recovered after treatment by hypodermic injections of ⅓ gr. of strychnia every other day for four weeks.

Dr. Keyser said he believed that it was not always the amount of tobacco used that caused the defect, and that he would call attention to the case of a young man who called upon him in relation to failing vision, and on examination he could find nothing but suspicion of tobacco amblyopia. But upon questioning the patient said that he had been trying for a long time to smoke, but invariably nausea occurred on every attempt. He has tried weak and strong cigars with the same effect. He still persevered daily in the effort, thinking that was the only way to become a smoker. On desisting from any further attempt to use tobacco he recovered entirely. He did not drink any alcoholic liquor of any kind. This case shows that it is not the quantity of tobacco used that causes this disease, but as in this case, the tobacco may act as a peculiar irritant to the stomach—the brain subsequently becoming affected. In other words, there was in the case cited an idiosyncrasy against tobacco.

SOME THOUGHTS ON THE ETIOLOGY, PATHOLOGY AND THERAPEUTICS OF PHTHISIS PULMONALIS.

Delivered in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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Every physician has measured swords with this Prince of Destroyers, and with all it has too often proved the victor. In every age it has been carefully studied by the best minds in the profession, yet only the nostrum vender fully comprehends its methods and cure.

Truth is many-sided. Diversity in unity in the world of matter and of spirit is the thought of God. The mind of man, or the medium through which it acts, impels different investigators to follow different lines. Their eager search and earnest faith in their own methods may narrow their vision, but all is evolved that lies in the direction of their search. The impartial collaborator unifies their results, and truth is revealed.

It is generally agreed that phthisis is the consequent of a constitutional cachexy, which may be hereditary or acquired—not the disease, but the organic elements which, under certain conditions, are prone to the development of tubercle—and that when the predisposition exists and the conditions are favorable, we have tuberculosis. All, however, do not agree upon its etiology and pathology. Until these are solved we cannot hope to find a rational treatment, preventive or curative. The predisposition or constitutional taint lies in the elements from which the tubercle arises. While there is some diversity of opinion as to the particular structure from which it springs, it is generally conceded that it originates in connective tissue. Fothergill says that "connective tissue is primitive tissue from which higher tissues are evolved.[1]" Whether its cells, like the embryonic cell, are capable of evolving physiologically higher types of cells is, perhaps, doubtful, but under degrading influences they are prone to differentiate lower types of pathological cells. From this tissue, normally abundant throughout the body, and formed wherever through inflammatory processes albuminous effusion occurs, springs nearly all the neoplasms.

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[1] Handbook of Treatment, p. 192.

Tubercle is a neoplastic growth, and the tubercle cell is a pathological connective tissue cell, or possibly, as some distinguished pathologists assert, an infiltration of lymphoid cells in the aventitia of blood vessels, or small nodular masses of lymphoid cells around or within blood vessels or ducts.[2] But whether the tubercle arises from the connective tissue or from the lymphoid cell—the white blood corpuscles produced by the lymphatics—let us see, if we can, what constitutes the predisposition to its differentiation. Whenever connective tissue approaches an embryonic type, is rich in nuclei and young cells, an exhausted vitality, from whatever cause, leaves this immature plastic cell growth devitalized and prone to retrograde metamorphosis, and the new cells are, according to Virchow, "a pitiful production, from their very outset miserable." Like all the lower forms of life, they substitute rapidity of proliferation for perfection of development. Their rapid reproduction presses them one against another and they form a tubercle. The pressure strangulating the circulation at the centre, the central cells are devitalized and soon degenerate into a shrunken, cheesy mass, the cheesy transformation being often followed by purulence. While this is the common course, the result varies with the extent of degradation, and reaches its acme in the milliary tubercle, where, through their rapid proliferation, the cells are detached and carried through the lymphatic vessels to other locations. The more degraded the cell, the more dangerous the disease.

Where there is defective nutrition, or vital deterioration from any cause, in those who inherit or acquire a facile type of connective tissue cell, it is prone to differentiate the lower type of tubercle cell; but why this specific differentiation, is, perhaps, as inscrutable as the physiological differentiation from the embryonic cell of the various cells of the body. But the fact that embryonic cells do thus differentiate on and up to all the parts of the perfectly developed animal makes it less wonderful that some of their offspring, under given influences, should differentiate pathological cells, the pathological structures being only physiological diversions. While we may not know why special deteriorations occur, the influences that lead to them, their etiology is less obscure. We know that any cause sufficient to produce vital deterioration beyond a given point will cause the development of tubercle where the predisposition exists. The amount of deterioration is, however, by no means a fixed quantity, but varies with the predisposition. Yet the neoplastic growth never develops during robust health. Exhausting fevers, inflammatory processes, syphilis, excess of venery, pregnancy, lactation, corroding care, any cause that lowers vital action, especially when increased by unsanitary surroundings and climatic vicissitudes, tends to tubercle.

Catarrh, bronchitis and pneumonia have been considered causes of consumption, but it does not arise directly from inflammatory processes and it is doubtful whether any cause beyond innutrition and vital deterioration is necessary to its development. Without lowered vitality, general or local, there is no tuberculosis.

The contagiousness of phthisis is said to be *sub judice*. An epithelial cell may be transplanted, as in skin-grafting, and on favorable soil, with favorable surroundings, will proliferate. So it is not impossible that a tubercle cell, that can be transplanted through the lymph or blood vessels may be transferred from lung to lung; but this we think is the extent of its contagiousness. Each individual cell possesses an individual life, and where we find a cell there must have been a progenitor. It is as impossible for a cell to construct itself out of non-cellular matter as it is for an alga or an animalcule, a mastodon or a man, to build itself out of formative material. We know no life *de novo*.

From the time of Hippocrates there have been believers in the contagiousness of phthisis, and a large number of cases have been collected that seem to confirm the doctrine, but compared with those that have escaped contagion where the closest human relations have existed, they are far too few to establish any law, and a humane profession will not ostracise the unfortunate consumptive and deprive him of the sympathy and assistance of friends without further proof. The proof is too like that of the patent medicine man who hunts up the exceptional cases that get well and omits the hosts that die. Its contagion is certainly unlike that of variola, cholera and yellow fever, which do not occur independent of contact, and which do occur, in the unprotected, on contact. The history of such hospitals as the Brompton, London, and the Brehmers, Görbensdorf, as well as the observation of the million, show its contagiousness or portagiousness exceptional if not *nil*. Since the promulgation of the germ theory of disease, the theory of contagion has received a fresh impulse, not from any proof of contract through contact, but because of the bacilli found in dead tubercle cells, it being assumed that the bacilli are a *contagium vivum*. Animals and vegetables, microscopic or otherwise, have their habitat and their significance. Every specific degeneration has its dead tissue and doubtless its specific microbe. In the cell death incident to the tubercle, the bacillus tuberculosis finds its proper nutriment, and it may be the ferment that changes the caseated cell into putrid, semi-purulent matter.

We have before us the results of many experiments, by distinguished scientists, with microbe cultures. With all due respect for those by whom they were made, they have never created a tubercle cell or tuberculosis. By taking animals strongly predisposed to tubercular degeneration, placing them in unnatural confinement and on unusual diet, and injecting microbe cultures, it is alleged they have demonstrated the contagium of phthisis. With such animals and such surroundings, we may safely predicate phthisis after the injection of any ferment, or from substances, as pulverized glass, that are not ferments, or without any injection. A specific ferment must produce a specific disease and nothing else, and a specific disease must be caused by a specific ferment, and by nothing else.

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[2] H. F. Formad, paper before the Phil. Med. Soc., 1883.

When the animals have been inoculated with the "culture" and permitted their accustomed liberty the experiments have failed, and they have failed with the unnatural surroundings in animals in whom there is no strong tendency to the disease.

The argument for germ causation is: "It seems to be established that the so-called bacillus tuberculosis is uniformly present in tuberculous products and as uniformly absent in other products, that it is generally present in the sputa of phthisical patients and never present in the sputa of non-phthisical patients, and that tuberculous disease in animals may be produced by inoculation with the organism after cultivation has been sufficiently continued to eliminate all else pertaining to the tuberculous product. On these data are based the conclusion that phthisis is an infectious disease—in other words, that it involves in its causation a specific agent capable of self multiplication; that it is a communicable disease, and that the agent of communication is the bacilli tuberculosis; that is, this agent is contagium. The supposition that the bacillus is secondary to the tuberculous affection is not tenable, in view of the fact that the affection is produced by this organism after it has passed through several generations of culture out of the body."[3]

Distinguished as is the authority from whom we quote, the bacillus is not universally present, and, as a rule, not present at the beginning of the disease, and it is not always absent in other products. It has not been proven that the introduction of this organism, either before or after culture, is uniformly followed by phthisis, or that the disease produced in the lower animals is identical with phthisis in man, as has been fully demonstrated by the experiments of Formad, Sternberg, Truesdale and others. To make this theory sustain itself, its advocates must not only explain away results and the absence of results, and similar results produced by pulverized glass, etc., but must go back to the theory of Læunec, that it is a special growth, unlike any other tissue; or of Carswell, that it is a secretion *sui generis*, disproved by the rational teachings of Virchow and Niemeyer. Certainly there is abundant proof that, as a rule, the dead cells precede the microbe, and the dead cells can arise from no other source than the tubercle cell. Virchow has truly said: "No form of morbid growth arises which cannot in its elements be traced back to some model which has previously maintained an independent existence in the economy."

The pathology of Virchow has been demonstrated, and that of Læunec and Caswell disproved. Dr. Formad thinks Koch has taken a consequent for a cause. He says: "Koch has discovered that tubercle tissue is infested with bacilli, and this is correct; but this tubercle tissue is not created on account of or caused by the bacilli. These organisms invade the tissue wholly because it is a culture medium favoring their development." Prior to the cell death bacilli are not found in tubercle more than in the lung tissue before its differentiation.

The advocates of the germ theory tell us "our bodies outside, and especially inside, are covered by or contain billions of bacteria. All these microbes may become injurious under certain conditions. . . . . With certain kinds of bacteria the animal cells carry on a constant 'fight for life,' while others, more deadly, destroy cellular elements at an early date, in spite of resistance;" and that "all the competent men the world over, who have searched and studied the subject experimentally, have come to an almost unanimous conclusion—and they form a colossal array of intellect—in support of the much praised and much abused germ theory."[4] Truth is not demonstrated and science not established by a "colossal array of intellect." Only a few years have elapsed since all the world believed "the Lord made the heaven and earth, the sea and all that in them is, in six days." In the formation of tubercle, "cellular elements" are not destroyed in their "fight for life" with the more deadly bacteria, "in spite of resistance," but are merely degraded to a lower type, and that regardless of the presence or absence of microbes. Nor is the theory as stated by Dr. Phillips in a paper read before the last International Congress any more tenable: "Phthisis is the consequent of the bacilli tuberculosis, whose fatal consequences are in all probability attributable to a power possessed by them in elaborating new products, which are afterwards absorbed." The premises granted, the probabilities may be as you like.

The investigations and conclusions of Pasteur and Kohn and Koch created great expectations in the treatment of disease, and especially phthisis, the opprobrium medicini, and many members of the profession made earnest search for specifics. They administered their agents with intent to destroy the pathogenic germ. In the treatment of phthisis they loaded their syringes with germicides and emptied them in the cellular tissue, the circulation, the lung, the tubercle, and finally into the rectum, hoping, it would seem, to steal a march on the enemy by the postern gate. The last treatment, instituted by Bergeon, which "*went up like a rocket and came down like a stick*," illustrates how prone we are, in the solution of vexed questions, to jump at conclusions and adopt means wholly inadequate to the end, In the first volume of the Journal of the American Medical Association for 1887 we find four articles and several editorials commending the "treatment," and one, by Dr. Lynch, of Baltimore, condemning it, and he was severely criticized by the learned and practical editor of The Journal, who said: "It was with some surprise that many members of the Association heard the Chairman of the Section on Practice of Medicine, in his address last week, utterly condemn the Bergeon treatment. . . . . The method seems deserving the most thorough and extended investigation."[5] The hopes entertained when the germ theory of disease was enunciated are amply illustrated in this treatment.

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[3] Austin Flint, M.D., System of Medicine by Pepper, Vol. iii, p. 300.

[4] Paul Paguin, Kansas City Medical Record, July, 1888.

The ardent search for specific germicides has called forth this query from one of the greatest of living physicians, Dr. B. W. Richardson: "What have we done to be visited in the heavens above, in the earth beneath, and in the waters under the earth, with this *pestis bacilorum*, which is now regnant?"

If germs created tubercle and we could administer germicides of sufficient strength to destroy them without first destroying the patient, would not the tubercle remain and the question be *cui bono?* An account of the remedial measures employed for the cure of phthisis would fill volumes. Since Koch's discovery of the tubercle bacillus they have generally been leveled at the germ, and even in the recent treatment of phthisis by the inhalation of hot air, which promises well, many seek its *rationale* in the destruction or hindered development of germs. As well say that we crush germs in the movement cure, as that we scald them in the hot air treatment. Dr. Wm. Porter, of St. Louis, has well said: "No practical gain has been made based upon the hypothesis that the microbe is the factor *per se.* So far as our present knowledge extends, the bacillus is to phthisis as smoke to fire: it may indicate its existence, yet neither incites nor intensifies the combustion."[6]

Phthisis being a disease of hereditary or acquired tissue degeneration, its rational treatment must lie in tissue restoration, in the use of such measures as will arrest retrograde action and, if possible, restore the degraded cells to their normal condition. Dr. Joseph Jones, of New Orleans, La., says the remedies of the greatest use appear to be cod liver oil, phosphates and hypophosphites of iron, zinc, sodium, potassium, *strychnine and the bitter tonics.*[7] For a clear statement of a rational treatment we may well refer to "Fothergill's Handbook of Treatment," pp. 199–212, and fully endorse it: "Every case has its own peculiarities and its own exigencies, and must be studied in detail." No routineism, whether with germicidal intent or otherwise, can lead to victory.

If the importance of an easily digested oil in the treatment of phthisis, preventive and curative, required emphasis, we need only refer to the "blubber"-eating people of Greenland, Lapland and Iceland, where consumption is never indigenous, and where, when imported, seldom extends to the second generation.[8] Yet in these countries all the conditions that tend to the disease are present—a low altitude, a damp atmosphere, and a most inhospitable climate; homes, if not built beneath the earth, usually built of earth, innocent of ventilation and cleanliness, with their occupants packed together like sardines, that they may maintain the greatest possible bodily warmth.[9]

The absence of fat tends to tuberculosis. Its presence tends to arrest and restore tuberculous degenerations. How, we may not know but, in some way it facilitates metamorphosis, aiding both in the removal of effete matter and in building up degraded tissues. Thus we find tubercle developed in cattle and sheep by starvation through the winter in process of repair after the summer's fattening. Chambers, in his admirable little volume on "The Indigestions," says of oil: "It is itself the material by which life is manifested. Under its use beneficial influences are exerted throughout the whole body. Old wounds and sores heal; the harsh, wrinkled skin regains the beauty of youth; debilitating discharges cease, at the same time the normal secretions are more copious; the mucous membranes become clean and moist, and are no longer loaded with sticky epithelium; the pulse becomes firmer and slower, that is to say, more powerful, for abnormal quickness is always a proof of deficient vitality. Such are the effects, perfectly consistent with physiology, of supplying a sufficiency of molecular base for interstitial growth. To find the easiest assimilated oil, and to prepare the digestion for the absorption of oil, are the main problems in the cure of consumption."

As an important corollary to this we should insist upon the cultivation of a taste for fat, especially in children of a consumptive heredity. Alcohol has been commended as *the* hydro-carbon in the treatment of phthisis, the argument being that "experiment has shown that the combustion of one grain of alcohol raises the temperature of water 1° centigrade. Cod liver oil in the same quantity brings to a like degree of temperature seven litres of water. Hence, the relative heat-producing powers of alcohol and the well-known nutrient oil are as three to four." In the prevention and cure of phthisis oil does more than produce heat, and if it was otherwise, physiological chemistry does not prove the body an alcohol lamp. In all the alcohols and ethers hydrogen is greatly in excess of oxygen. In ethytic alcohol we have C_2H_6O. Such compounds demand oxygen at any cost. When introduced into the body, either by inhalation or imbibition, instead of oxydizing, they deoxydize the blood and tissues; instead of increasing, they decrease metamorphosis and the generation of heat; instead of generating nervous force, they produce anæsthesia. The demand of the body for an oxydized blood increases the frequency of the heart's action, but through want of energy from want of oxygen the rapidity of debility is substituted for force. Vital metamorphosis is diminished and vital heat decreased. In all treatment we must strive to improve digestion and assimilation, and we can not renew tissue without the removal of that which has become useless. Alcohol "pickles" the tissues; oil aids in their removal and renewal.

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[5] Journal of the American Medical Association, June 18, 1887.

[6] Medical Bulletin, Philadelphia, March, 1888.

[7] Journal of the American Medical Association, March, 1886.

[8] "Consumption as a Contagious Disease," by Dr. Rumbold, 1880.

[9] "The Homes of the Edas," by Warreford S. Low, 1879.

Prof. Jaccoud, than whom we have no better authority, in his work on "The Curability and Therapeutics of Phthisis," considers the disease curable in all its stages—not all cases, but curable as are other diseases. In all treatment he relies largely upon the influence of climate, adapting its conditions to the individual case. Notwithstanding Jaccoud's dictum, there are widely differing opinions as to which is the best climate; thus, we find the balmy air of sea-surrounded Orotava praised, the soft warm breezes of St. Augustine, Fla., the fragrant odors and almost tropical warmth of the Louisiana pine-belt, the high cold climate of Colorado, and the damp and chilly atmosphere of lake-girt Michigan.[10] As these widely differing opinions seem but the varied notes of "Home, Sweet Home," we must consider principles and statistics.

Before we can give intelligent advice to invalids we must understand the various elements entering into and producing what we call climate, and their impress upon life, as thoroughly as the etiology and pathology of disease. Webster defines climate as "the condition of a place in relation to the various meteorological conditions, as temperature, moisture, etc."

Climates are mainly created and influenced by latitude, topography, superficial strata and the presence or absence of large bodies of water, and are the aggregate of atmospheric conditions of particular localities at specified seasons. The chief elements to be considered in climatic treatment are: 1, purity; 2, rarefaction, as produced by altitude; 3, dryness; 4, temperature; 5, variability; 6, sunlight; 7, electricity; 8, atmospheric motion. The first and second elements are chiefly influenced by altitude, the others by latitude, configuration, and porosity of the surface and relation to bodies of water.

Dr. Dennison advocates the "dry, cool, rarefied, stimulating and sunny atmosphere of Colorado" because, among other reasons, "cold stimulates and heat depresses." Is not this as fallacious as the Thompsonian dogma, "heat is life, and cold is death?" A limb mutilated beyond hope of recovery is restored through the stimulus of hot water dressings, and a frightful post-partem hæmorrhage is arrested by the stimulus of hot intrauterine injections. "*In media tutissimus ibis*" must be one rule in selecting temperature for the consumptive. An atmosphere that stimulates through altitude, and yet woes to out-door life, is most favorable for the prevention and cure of phthisis. It is not the heat or the cold that tends to cure in phthisis. Robust health may endure an inhospitable climate, but such a climate does not produce robust health in those of marked tuberculous heredity; while in damp air, cold or warm, containing less oxygen than dry air, which is absorbed less readily from the moist membrane, there is diminished oxydation of the blood engorgement of central organs. Dr. D. thinks nightly chilling and sometimes freezing renders the atmosphere "inimical to germ life." We don't know so much about the health of the germ, but we know such conditions are inimical to human health.

Whether from the direct effect of abstraction of moisture from the pulmonary tissue, or the consequent control of pulmonary temperature, or other cause, a dry atmosphere is essential to climatic treatment. Change in temperature, when the range is not too wide, may not injure vigorous life; but the alternations of temperature, the hot days and cold nights, so common in all damp climates, leads to engorgement of central organs—spleen, liver, kidneys, lungs,—to periodic and congestive fevers, to lowered vitality and to consumption, wherever the predisposition exists. Damp, hot days and damp, cold nights produce directly opposite results to dry, high altitudes, where external tissues are hyperæmic and internal organs anæmic. Cold condenses the atmosphere. In cold weather, at low altitudes, the full use of the pulmonary tissue and circulation is not required, and there is tendency to atony and the tubercle cell. In simply cold climates, of whatever altitude, sudden and extreme changes fall heavily upon the exposed lungs, and such changes cannot be avoided. Much of the time must necessarily be spent in artificially heated rooms, too often illy ventilated, between which and the out-door air there is a difference of many degrees. It goes for the saying that the advantage of climate is the climate, and not the heated air of the living-room. A climate that permits and invites out-door life is a necessity to satisfactory climatic treatment. Cold and rain confine the patient in-doors; a warm, moist air tempts to indolence, and a hot, dry air leads to idleness and the shade, while a high, dry air of vernal temperature stimulates to out-door life and exercise, and so fills all the conditions of climatic treatment.

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[10] Transactions International Medical Congress, Vol. v.

Climatic treatment is based upon more rational grounds than the destruction of germs. In an atmosphere rarefied by altitude the pressure upon the surface of the body is diminished and the vessels of the periphery are turgescent, while the viscera are comparatively anæmic. The pulmonary circulation freed from hyperæmia, congestion and obstruction, tendency to hæmorrhage is prevented or relieved, respiration is full and free, the cerebro-spinal functions are more active, the great central glands relieved of remora and congestion, effete matter is more thoroughly removed, the appetite, digestion and nutrition are improved, the desire and capacity for exercise increased, and we begin to feel

> "The wheels are just as strong as the thills,
> And the floor just as strong as the sills,
> And the panels just as strong as the floor,
> And the whippletree neither less nor more,
> And the back crossbar as strong as the fore,
> And the spring and axle and hub encore."

The "hardy mountaineer," with his physical and mental activity, does not owe all his growth to mountain scenery, but illustrates the beneficial effects of altitude. The rarefied atmosphere and the relative anæmia of the lungs, other things being equal, demands and permits full draughts of air, while the brain and all the great vital organs, permitting an unobstructed circulation of the vital current, tissue degradation and deterioration are prevented or relieved.

Prof. Jaccoud says: "Mountainous climates at the height of from 4,900 to 6,200 feet have in reality a double effect: Firstly, a general one, by which the constitution is restored to a healthy condition; secondly, a local one, by which the activity of respiration is increased to a maximum, while the lung is protected from the effect of congestion and hyperæmia. Climates which, on account of their more northern latitude, present analogous conditions of temperature at a lower altitude, produce the same tonic effect. They have not, however, the same mechanical influence upon the lungs, this being entirely due to barometric pressure. Climates with moderate pressure are wanting in the mechanical action of rarefied atmosphere, and there is insufficient tonic and fortifying effect; nor do they possess that special purifying effect peculiar to high altitudes; they therefore fulfil only secondary indications—secondary in themselves, or at the time when they occur. While such climates have no curative effects on the disease and are not preventive of fresh tubercle, they may, on account of having a temperate, or warm, fresh temperature in winter, act favorably upon any preëxisting bronchitis or pulmonary catarrh. Confinement within doors is unnecessary, and much of the time may be spent in the open air without danger of provoking bronchitis or pneumonia, which would not be the case in a more rigorous climate, or one having greater variability of temperature. It is thus seen that climates of the second class, while of an undoubted value in the treatment of phthisis, are only of secondary importance."

Altitude in any latitude that does not permit to the consumptive out-door life loses much of its advantage. If we can find a locality with a comparatively dry atmosphere which at 4,000, 6,000, 8,000 or 10,000 feet will permit patients to live largely out-of-doors, they will at the same time get the benefit of barometric pressure, climate and healthful exercise. Though not a resident of New Mexico, its barometric pressure will range from 4,000 to 10,000 feet, with a climate that will permit and stimulate out-door exercise, with which its hygrometric conditions will rarely interfere.

The damp, cold climate of lake-encircled Michigan is excellent for consumption, but bad for the consumptive, and its statistics prove what science teaches. According to the census reports of 1870 and 1880, it has a higher death-rate from phthisis than any other inland State in the Union. Of its deaths in 1870, 16.4 were from phthisis, and in 1880, 13.2.

In the States lying upon and near either ocean in the northern portion of the United States, notwithstanding their altitude, we have the highest death-rate from phthisis, the acme being reached in Maine, where, in 1870, 25.6 of the deaths were from consumption, and in 1880, 19.2; in New Hampshire they were 22.2 in 1870, and 15.7 in 1880; in Massachusetts, 19.9 and 15.7; in Connecticut, 17.9 and 19.2; in Rhode Island, 20.1 and 14.7; in California, 13.8 and 15.6; in Oregon, 18.2 and 12.1.

The warm, damp air of the Gulf States, with their lower altitude and higher temperature, give much more favorable statistics than those somewhat similarly situated as to moisture, but with more rigorous climates. Thus, the percentage of deaths from phthisis, as shown by the census of 1870 and 1880, were 5.7 and 8.0 in Georgia; 6.4 and 8.0 in Alabama; 7.0 and 9.0 in Mississippi; 7.0 and 8.2 in Florida, and 7.7 and 8.2 in Louisiana.

Colorado and Nebraska, so highly lauded for the influence of their climate on the consumptive, show by the same census a slightly larger proportion of deaths from phthisis than the low-lying but warm States on the Gulf of Mexico. Thus, in Colorado 8.5 and 8.2 were from phthisis, and in Nebraska, 8.7 and 7.0. In New Mexico the deaths from phthisis are given in 1870 as 3.8, and in 1880, 2.5, and in Arizona, 4.0 and 6.9, and this where the native population suffer largely from a specific disease that tends to a type of phthisis.

From the view we have taken of the etiology and pathology of phthisis, as well as from statistics, we conclude that a sanitarium for consumptives in New Mexico, away from the hot springs, with their excess of moisture, upon an arroyo of 4,000 or 5,000 feet above the sea, with cottages extending up the mesa to 10,000 feet, permitting patients to be moved up or down, as their condition permits or requires, will secure to the consumptive all possible climatic advantages and make for them the most perfect retreat known to any country or clime.

Yet we must remember that in all climatic treatment we must "temper the wind to the shorn lamb." In the flat and narrow chest, in tuberculous deposit confined to the apex, or yet more extensive if the purulent stage has not been reached, altitude, high, dry and equable, with a climate that encourages out-door life, is positively preventive and curative, not in a day or a year, but continued until the cure is complete. When caseation and softening are more extended, a mild, dry and pure atmosphere is required, such as may be found in the lower altitudes of New Mexico and in the Carolinas, Tennessee and Georgia. When the tuberculous deposit is extensive, expectoration copious, hectic marked and emaciation extreme, the probabilities of cure are so small that the pleasures of home, where love may make the dying bed "soft as downy pillows are," should not be exchanged for an arduous journey to end in a final struggle away from the comforts and consolations of home and friends.

DISPOSAL OF HOUSE-REFUSE.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889

BY ALFRED LUDLOW CARROLL, M.D.,

OF NEW YORK

Household life necessitates the deportation of several different kinds of refuse matter, consisting of excremental substances, liquid wastes from the kitchen and the laundry, baths and basins, garbage, sweepings and dust of various sorts. As regards the first of these, the average for each individual is 57 pounds of fæcal excreta and 114 gallons of urine annually; or, for a family of five persons, 285 pounds and 570 gallons respectively. The danger from these is not when they are freshly voided, but after decomposition has set in, favoring the evolution of noxious gases and volatile products of putrefaction. Where atmospheric oxygen has free access, the principal results of decomposition are ammonia, carbonic acid and water; but in large accumulations, where air can not thoroughly penetrate, deleterious compounds are generated, bacterial ferments multiply, and ptomainal products are given off in increased quantity. An additional peril arises where the intestinal discharges are impregnated with the virus of specific diseases, such as cholera, enteric fever, and probably other diarrhœal maladies, though even in this case it seems to be requisite for the development of the contagium that decomposition shall have reached a certain stage. When urine is mixed with fæces, fermentation occurs more rapidly and with greater evolution of volatilized organic products. For these reasons it is of prime importance that such matters be removed from any possibility of communication with the interior of the house, or of its inmates, before they shall have time to decompose; that is to say, for practical purposes, within twelve hours.

But a grievous mistake, made by many engineers and by some superficial writers on hygiene, is to consider the intestinal and renal dejecta as the only things to be cared for, whereas in reality they constitute less than one per cent. of the offensive residua which should be speedily removed from inhabited places. The feathery masses of decaying epithelium from basins and baths, or the organic scourings from soiled clothing, not only afford fertile culture media for microzymes, but are often specifically infected; the culinary outpourings are virtually weak organic broths, responding readily to inoculation; indeed, all the water supplied to the domicile is discharged in so fouled a condition that prudence forbids its retention on or about the premises. There is little difference in the sewage of towns whether excremental matter be admitted or excluded, and in populous communities where "dry methods" are used it is found necessary to construct sewers in addition. Liernur's pneumatic system and other schemes based upon the single view of the manurial utility of undiluted excreta are open to the same objection.

If the arch-enemy of mankind had been asked to suggest the most mischievous method of dealing with these waste products, he could not have devised a more diabolical one than that which is commonly adopted, not alone in sequestered rural regions, but in the majority of villages, and which lingers as a relic of barbarism even in many cities, to wit: the storage of them in pervious privy-pits and cess-pools, whence the festering liquefied filth permeates the soil over a wide area, polluting the surface wells which are usually in convenient proximity, and poisoning with its noxious exhalations the ground atmosphere which is drawn into the basements of ill-constructed houses.

Of the various plans for the "dry disposal" of excreta, the simplest is admixture with dry earth or sifted coal-ashes, using either a shallow cemented pit, a box, or other receptacle above ground, or one of the more elaborate patterns of earth-closets. While this may be practicable for single houses or for very small hamlets, the difficulty of carrying it out on a larger scale is almost insurmountable. It is estimated that for a population of 10,000 more than a hundred tons of dry earth would be required weekly, and the supply and removal of such a quantity would involve expensive machinery. It is an error to suppose that the fertilizing quality of this earth after use will compensate for its transportation. Even when it has been redried and used several times it is no richer than ordinary garden soil, and is absolutely worthless as manure. It many places abroad the tub or pail system is employed wlth more or less satisfactory results, movable vessels receiving the excreta with or without the admixture of ashes, chaff, or other absorbent or deodorizing substances, and being removed once a week or oftener by the public authorities, the more voluminous remainder of the sewage being reserved for irrigation or "intermittent filtration."

In rural or suburban districts, where there is a reasonable amount of ground about the house, with grass or a small garden plot, liquid wastes may safely be distributed on the surface; not poured persistently in the same spot, after the manner of the average handmaiden, to create an artificial swamp close to the foundation walls, but scattered thinly and alternately over a wider extent of growing vegetation. A piece of land 20x 25 feet will amply suffice to utilize all the "slops" of an ordinary household, if due regard be paid to their distribution, avoiding, of course, the vicinity of the well, if the water supply be derived from this source. A neater but costlier plan is "subsoil irrigation" through a branching system of loose-jointed small drain pipes, laid about a foot below the surface of the ground, so as to distribute their contents within reach of the roots of plants. To render this method effective it is almost essential to collect the sewage in a tank with an automatic mechanism for discharging at stated intervals, since a continual trickling would fail to flow to the terminal branches, and without preliminary subsidence the suspended solids would be apt to clog the pipes in a sluggish current. Too great a descent, on the other hand, will carry all the discharge at once to the farther end of the drains, thus thwarting the purpose of uniform distribution. The proper grade for pipes in this system, according to Col. Waring, who is one of its strongest advocates, is not more than 6 inches in each 100 feet. Beyond the æsthetic consideration of putting things out of sight, this subsoil system has no special advantage over surface irrigation; indeed, where large quantities of sewage are to be dealt with the latter is preferable, if it be intermittent. For both methods perviousness of the soil is a pre-requisite, and a clayey or other moisture-retaining ground should first be thoroughly underdrained; for it is to be remembered that the purifying power of "dry earth" resides not in the earth itself, but in the air contained in its interstices. It is an accepted belief that the bacilli of "nitrification" have their usual field of action in the uppermost two or three feet of a fairly pervious soil, while at a greater depth those which preside over mischievous putrefactive processes predominate. This limitation, however, cannot be arbitrarily fixed, since it depends upon the depth to which the soil is aerated, and in a water-logged earth it may be confined to a few superficial inches. In properly selected or prepared ground the water of sewage (if not too profusely applied) filters downward, leaving its suspended and most of its dissolved matters to the ventilated laboratory above.

A desire for all attainable "modern improvements," conjoined with the imperative demand of the imported domestic vicegerent for "hot-and-cowld-wather-and-stationary-tubs," has brought into general vogue, even in rural abodes, water closets, kitchen sinks, fixed hand basins, and the rest of the complicated paraphernalia of the "water carriage" system, which is a very good system, if the plumbing arrangements be intelligently planned and well constructed, if there be a sufficient water supply to flush and thoroughly cleanse all waste pipes, and if a safe outfall be provided, but which, if made to discharge into a leaching cess-pool or to pollute the nearest stream, to the detriment of riparian residents below, is anything but an unalloyed blessing. If a cesspool be permitted in connection with such a system, it should be of small capacity, absolutely water-tight, ventilated by means of an air-pipe reaching above the level of respiration, and emptied frequently. Its liquid contents, which comprise about seven-eighths of the fertilizing materials, may be utilized in a garden by either surface or subsoil irrigation, and the precipitated solids deodorized with lime, copperas, or other agents, for deportation to such destination as chance or the public authorities may afford. On a scale of more expensive magnitude, where arable or pasture land of suitable quality is at hand, a well-masoned "settling basin," with an overflow into a distributing tank, answers satisfactorily. In communities with a public system of sewerage the final disposition of the sewage does not concern the householder as an individual, though it should interest him more than it usually does in his collective capacity.

The grosser refuse solids which go under the generic name of "garbage" constitute the bane of social existence, from the domestic "swill-pail" to the "dumps" of large communities. Even where the corporate authorities assume the duty of gathering them from the separate premises they are usually deposited in an aggregate of nastiness at some convenient spot on the outskirts, whence their exhalations vitiate the atmosphere for miles around, or, mixed with mineral rubbish of different kinds, are used by some contractor to fill in prospective building sites, for the gradual murder of future tenants. The common rustic makeshift of burying them in casual shallow pits handily contiguous to the domicile must in time overtax the disinfectant capacity of any soil, and is, as a rule, rather less advisable than the prevalent urban practice of throwing them into a neighbor's gutter or over the roadway. The best way to get rid of such things is, unquestionably, to burn them. Cremation is the manifest destiny of organic matter in all populated places. It means a rapid and innocuous, instead of a slow and possibly dangerous, process of oxidation. In either case organic substances are never destroyed, but their chemical compositions are changed and their elements are profitably recombined in nature's laboratory. In the most humble household the incineration of vegetable matters may be easily effected in a cooking stove or range, if they be put in a little at a time. An ingenious metallic pail with a water-sealed cover and a hinged grated bottom has been anonymously invented by a member of this Association, in which, when placed over one of the openings of a range, a considerable quantity of garbage can be inodorously dried to the point of combustibility and dropped into the fire. On a larger scale furnaces of different capacities are in common use abroad and to a less extent here, which cremate, without offense and at small expense, all private and public refuse, including slaughter-house offal, street sweepings, etc., from small villages up to great cities. One of the first of these, I believe, in this country has been for some time in successful operation on Governor's Island, in New York harbor, where the orderly in charge informed me that the only element of the garrison jetsam which was passingly malodorous was an occasional burnt-offering of old shoes. In some instances the mineral detritus, which forms a large percentage of city refuse, after being thus freed from organic admixture, is converted into a serviceable cement, as is notably the case in Leeds, where the outlay for maintaining the "destructor" is much lessened by the sale of the resulting product. But, aside from any actual pecuniary return, the economy of this plan of combustion, as compared with other methods of disposal, should commend it to every corporate government. In the notorious Whitechapel district of London, where it formerly cost from half a dollar to a dollar a load to cart away to a distance the household refuse and "dust," all the contents of the East End bins are reduced to a harmless mass of clinker at about one-twelfth of the expense by means of a series of strong draught furnaces, which consume all gases generated during the process. The day is probably not far distant when this method of purification by fire will be adopted for organic waste substances wherever civilized men dwell together. Meanwhile it is the part of wisdom to prevent their accumulation either above or under ground.

If an apology be due for this brief presentation of rudimentary considerations before an assemblage principally composed of experts, my excuse must be a desire to remind a wider audience, through the publicity given to our proceedings, that the "dry methods," exclusively advocated by a few doctrinaires, are applicable to a very small part of our deleterious wastes; that sewage farming and other schemes for irrigation and filtration involve separate treatment of precipitated solids; that the best devised system of sewerage still leaves on our hands an enormous residuum which must be otherwise dealt with; and that no one method of refuse-disposal will satisfy the diverse needs of households and communities.

THE TREATMENT OF CYSTIC GOITRE BY ELECTROLYSIS.

Read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, held at Newport, June, 1889.

BY E. FLETCHER INGALS, M.D.,
OF CHICAGO.

In a recent paper upon the treatment of cystic goitre,[1] Thomas M. Hovell, F.R.C.S.E., recommends Sir Morell Mackenzie's method, a description of which was first published in 1872.[2] He compares this plan of treatment with the methods advised by the authors of the leading English and American works on surgery, and unless he is too enthusiastic in his support of Mackenzie's treatment, it is a matter of surprise that a method so efficient and safe should have been nearly ignored by eminent surgeons, while operations of doubtful utility and much hazard have been given the preference. In Holmes' System of Surgery, 1883, Mackenzie's method is recommended as the best. However, Mr. Bryant[3] apparently gives preference to simple tapping of the cyst, or injections of an alcoholic solution of iodine or of the perchloride of iron. In cysts of the isthmus he recommends incision into the cavity as a good and successful operation. With these recommendations Mr. Hovell takes issue on the ground that tapping is very rarely successful and that the irritating injections tend to cause inflammation, which may be excessive, without providing for checking of hæmorrhage when iodine is used, or for the escape of pus in either case.

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[1] Wood's Med. and Surg Monographs

[2] London Lancet, May 11, 1872

[3] Practice of Surgery, 1884

Mr. Bryant's recommendation for incision of a cyst of the isthmus, or free incision of any cyst as soon as it has suppurated, is objected to as being unnecessarily severe and dangerous.

Mr. Erichsen[4] recommends tapping, or injection of tincture of iodine, and refers briefly to Mackenzie's method.

The late Prof. Gross[5] enumerates six methods of treatment of cystic goitre, viz: the seaton, puncture, injections of iodine, incision, excision, and electrolysis, and states that all are more or less serviceable but not free from danger.

Mr. Hovell agrees with Mr. Bryant that the treatment by seaton is dangerous, and cites Billroth, who twelve years ago spoke unfavorably of incisions, but reported thirty-five cases treated by injections of iodine, with twenty-nine cures and one death. Billroth had operated eleven times by von Brun's method, *i. e.* incision of the sac and stitching its walls to the skin, but of these three had died.

Mr. Hovell considers excision a very serious operation; thus from his comparison it appears that Sir Morell Mackenzie's operation is far superior to any other; however, he does not consider electrolysis. Without informing us as to the actual results of Mackenzie's method, except in two cases treated by himself, he leads us to infer that it is practically free from danger and may be expected to cure the case in from three weeks to four months, and that in the majority of cases the duration of treatment will not exceed eight weeks.

Sir Morell Mackenzie's treatment consists in tapping the cyst with a trochar, the canula of which corresponds in size to a 7, 8 or 9 English catheter. After the contents have escaped, he injects into the cyst a solution of perchloride of iron (ʒij. to aq. ℥j.), which is allowed to remain three days, the canula having been corked and kept in position by a tape passed about the neck. At the end of this time the plug is removed, and if suppuration has taken place the cavity is treated like a chronic abscess; but if suppuration has not occurred the injection is repeated and managed as before. After suppuration takes place poultices are applied and the cavity washed out through the canula several times a day with some antiseptic solution.

This method seems to have been followed by most excellent results, but my personal experience with electrolysis, in two cases, leads me to believe that it sometimes cures more rapidly than, and is at the same time devoid of many of the inconveniences of, the treatment just described.

Case 1.—Mrs. S. consulted me in 1884 on account of a cystic goitre of the right lobe, which I found to be an inch and a half in diameter. I aspirated this two or three times and drew off at at each about an ounce of dark, thin blood or bloody serum. This would be immediately followed by the escape of clear, red blood if the aspiration was not at once discontinued. About one-third of the tumor was found to be of a solid character. Finally I introduced an electrolysis needle into the sac, and placing the opposite pole over the tumor, passed through it for about ten minutes an electric current from six to ten La Clanché cells. This operation was repeated three or four times, when the sac was found not to refill. About three years afterward I found the parts in the same condition. The solid portion of the tumor remained but had not increased in size, and the cystic portion had been entirely cured.

Case 2.—G. L. J., cystic goitre of several years' duration. Patient came to me in the middle of January, 1889, with a history of having had the cyst tapped and injected with iodine and other substances several times during the past two years; also of having had it laid open, and of having worn a seaton in it for several months. I found a cyst in the right lobe of the thyroid gland about two and one-half inches in diameter, which was found to contain three ounces of thin, dark blood. I aspirated the cyst and injected it with carbolic acid several times, as follows:

January 19—ʒss of 5 per cent. aqueous solution, which was drawn off and followed by ʒj of a 20 per cent. solution in glycerine.

January 26—♏xl of a 30 per cent. sol. in glycerine.

February 2—♏xxx of a 30 per cent. sol. in glycerine.

February 9—♏xxx of a 60 per cent. sol. in glycerine.

February 16—♏xv of the 95 per cent. acid, full strength.

The treatment proved of littl or no benefit, for on the 23d of February I found the cyst about the same size as at the beginning. I then introduced two platinum needles into the cyst about an inch and a half apart, and passed through them for twenty minutes the current from four diamond carbon cells (similar to La Clanché).

March 2—Cyst much smaller; repeated the treatment.

March 9—Cyst still smaller; repeated the treatment.

March 16—Repeated the electrolysis in the solid portion of the tumor, the cyst being imperceptible.

March 23—Cyst has not reappeared, and is believed to have been cured.

Thus the cyst that had resisted for many months various other forms of treatment, was completely eradicated by electrolysis in less than four weeks. The strength of the current employed was regulated by the patient's ability to stand the pain it caused. A month later, when the patient was last seen, he continued well.

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[4] Science of Surgery, 1884.

[5] System of Surgery, 1882.

Throughout the treatment I was assisted by Dr. J. E. Rhodes.

No. 70 State street.

NOTES ON THE PARASITIC THEORY OF ALOPECIA AREATA.

Read in the Section of Dermatology and Syphilography, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY LEWIS WICKHAM,

INTERNE TO THE HÔPITAL ST. LOUIS, PARIS.

So long as a specific parasite for alopecia areata remains undiscovered or is not proven beyond a doubt, so long will the parasitic theory as applied to this affection encounter many adversaries. In favor of this theory in default of the parasite itself there are certain facts of contagion which are definitely proven, and which cannot be regarded as simple coincidences. Among the cases of alopecia which we have had occasion to study in the wards of the St. Louis in the services of Drs. Hallopeau and Vidal, we have noted different ways of transmission from one individual to another of variable degrees of importance.

Here are certain examples of the first order of facts which we are able to see quite frequently:

First. A small girl is affected with alopecia; her sister sleeping in the same bed is ere long attacked with the same disease.

Second. Three children of the same family are attacked with alopecia at short intervals from each other.

Third. A small girl living in the country came to pass a few days with her relatives in town, where a child has alopecia. One month after the child from the country presents plaques of alopecia.

It is to be especially understood that the facts we report in this communication are determined by histological examination. Other instances of the same nature might be cited, but it is unnecessary, as we do not claim that the facts herein cited are rare. The adversaries of the theory may insist that the cases cited are those of simple coincidence, or occurring in members of a family under the same predisposing influences. But we have here two examples of a second series of facts which give a more clearly defined manner of contagion.

First. A young man seeks advice for a plaque of alopecia situated over the right temple, a place which was rubbed by the rim of his helmet, and which had existed for a month. He informed us that about two months previously he had worn the helmet of a friend who was affected with alopecia. This is not all. The plaque was not circular, but its invasion followed the part marked by the border of the helmet, and actually formed a line of alopecia from 2 to 3 centimetres broad in front, and from 8 to 10 centimetres behind, which corresponded precisely to the part rubbed by the edge of the helmet.

We now come to an observation of transmission which is clearly marked, which we have made quite recently.

Second. Four printers presented themselves at M. Vidal's clinic for diseases of the scalp, April 10, 1889. They were afflicted with alopecia and worked side by side in the room. They, themselves, were convinced that the disease was mutually contagious and came to obtain prophylactic measures for their fellow workmen as well as to get relief for themselves. Investigation revealed the following facts: F., æt. 25, perceived a plaque of alopecia on the vertex about the size of a 25-cent piece in July, 1888. Some time after he noticed another of the same dimensions on the right temple. In September, 1888, L., æt. 42, who worked at the side of F., noticed a plaque of alopecia on the nape of the neck. In October and December C., æt. 40, and D., æt. 35, became affected, the former on the nape of the neck, while the latter presented a plaque on the chin.

We investigated as to the presence of nervous complication with a negative result. On the other hand, in both instances the lesions developed quickly. In these cases it seems to us little doubt can exist of their transmission. These journeymen, thirty in number, working side by side in a small room, often exchanging caps, which served, it seems to us, as agents of transmission. Furthermore, these workmen take but little care of their scalps, which we believe greatly assisted in the transmission of the malady.

Would one still attribute the basis upon which these facts are founded to coincidence alone, or to similar conditions of life?

But the parasitic theory is further favored from a clinical standpoint as cited in some of the classic works on dermatology, the most conspicuous of which are the cases of transmission spoken of by Hallier.

It is in France principally that the most striking observations have been made. One can recall to mind the epidemic of alopecia areata in the school of Nogent, in which thirty pupils were attacked in succession. The diagnosis was confirmed by M. Besnier. Still more recently this learned dermatologist of the St. Louis has brought out in a report on alopecia areata which was presented to the Academy of Medicine July 31, 1888, two observations of value which of themselves might well serve as a basis upon which to found the theory of contagion. The first is taken from the report of M. Leon Cohn in May, 1888, on the consecutive occurrence during the month of twenty cases of alopecia in the Regiment Sapeurs-pompiers of Paris. In his official report to the Minister of War M. Leon Cohn writes: "We seem to furnish a most convincing argument in favor of the contagion of alopecia, from its prevalence and successive development in the regiment of Paris. This regiment by its commingling with the population of the city renders it the most intimately associated with civil life. A regiment, again, where the form of service exposes the men to mutual contagion. The sapeurs-pompiers are dispersed every night in small groups to posts where the same cots, and more especially the same bedding is used. There were in all seventy-seven successively affected." Such is the statement of this learned military surgeon. It may be well to add that this regiment had not been exposed to any nervous shock and no nervous disturbance had been noticed. None of those attacked were present at the tragic drama caused by the fire at the Opera Comique the month before.

The second observation reported to the Academy by M. Besnier is that of M. Leloir, of Lille, This case, remarkable as it is, is common in France. We give it here, in closing this series of clinical facts, because it is especially applicable to demonstrate the point we wish to make in this communication.

M. X., æt. 26, a pharmaceutical student, with apparent robust health, had been a victim of alopecia areata of the beard for three years. He sought medical aid in 1885, the disease having at this time invaded the scalp. A few months later he brought an intimate friend who had lived in the same lodgings with him, and who had a few weeks before been attacked with alopecia. Several months passed, when this same friend returning from a tour brought his mistress, who had also developed the disease. But this is not all. X, before consulting me, had spent his Easter holidays at his home; he took no precautions, using in common the same comb, brush, etc., employed by other members of the family. Some months after he returned from his holidays he came to inform me that his mother, one of his brothers and his little sister had been attacked with alopecia. Soon after this I had the satisfaction of examining them and confirming his statement.

These various observations are well calculated to force the conviction as well as to demonstrate the fact that there exists among the alopecias called *peladique* at least *one form of a contagious nature.*

We are far from denying the existence of a form of alopecia of neurotic origin. It seems to us absolutely certain, after having studied most carefully the clinical histories of numerous cases of alopecia, that certain cases are of trophoneurotic origin. The experiments of Max Joseph in 1886, who produced alopecia in small animals after section of the posterior branch of the second cervical nerve immediately behind the ganglion, as well as other investigators, prove conclusively that alopecia may be produced by neurotic disturbances. But this is no reason why one should deny the possibility of an alopecia which is contagious; for, aside from all other considerations, the observations which we have given are sufficient in themselves to establish the fact that certain cases of alopecia are contagious and consequently of parasitic origin.

Let us look at the objections which may be urged against the theory of contagion:

1. One of the first arguments is drawn from the opinion that, if we have here a contagious disease, the foci of transmission should be more numerous. We should possess a series of facts in themselves convincing. Healthy children should not be able to sleep in the same bed with those afflicted with alopecia without contracting the same. In schools, where one so frequently sees the disease, it should multiply in abundance. This argument does not seem to us to be of any great value. Against this we have what seem to us direct evidences of contagion from husband to wife and *vice versa*. Elsewhere, but in the same group of contagious diseases, we find some which are irregular and capricious in their mode of transmission. Why is tinea tonsurans not transmitted to adults? Why does one subject remain free in an epidemic of scarlatina? These instances are common and well known, yet no one doubts their contagious nature. Contagious alopecia is simply difficult of transmission, requiring favorable circumstances which are not always encountered.

2. The parasite has not been discovered in spite of numerous researches, and experiments by inoculation have given a negative result.

These arguments prove nothing either for or against the theory of contagion. There are not wanting diseases truly parasitic in which the parasite remains dormant for an indefinite period of time.

3. In a different way and withal of more importance is the argument drawn from the histological study of alopecia areata. The contagious theory seems here to be at fault, and the importance of this seeming default merits a careful consideration of the facts connected therewith.

First, let us consider the histological appearances as observed in the four cases which were carefully studied, the report of which has already been published. We will give an outline of this report: The plaques of alopecia present in their centre small broken hairs. They are short, being only 2 to 4 mm. in length. Thick and of a dark color at their free end, they are pointed, small, and of a light color at the root. The general form corresponds to the mark of exclamation (!). The hairs are sometimes adherent, but a slight traction is sufficient to dislodge them. Under the microscope the enlargement of the free end is seen to consist of nodules or swellings which give an irregular contour to the hair shaft. As the root is approached the swellings become pale, transparent and of very small size. The medullary canal is irregular, broken, and the presence of air bubbles is especially noticeable. At the margin of the plaque the hairs are easily detached, and they present the same appearances already described. This, in the main, is the histological description, and one is certainly obliged to acknowledge here all the characters of general atrophy of the papilla of the hair, *dystrophie*, due to some nervous disturbance. The histological study seems, therefore, to disfavor the idea of contagion. But can we not find a basis upon which this discrepancy may be satisfactorily explained? We think so.

M. Besnier has recently made a number of clinical and histological observations which throw much light on this subject.

Atrophic or *athrepsic* lesions of the hair in alopecia may be due to various exciting causes acting directly on the hair papilla or through the mediation of the nerves as reflex impressions.

Far from contesting that there are neurotic changes in the hair follicle in different forms of alopecia, the problem, on the contrary, would be impossible to understand were it not for the intervention of the nervous system. Even if the specific agent which produces alopecia areata were discovered, that of itself would not explain the changes wrought in the hair papilla.

This, then, is the prevailing idea among the majority of the dermatologists of France: *That there exist two distinct diseases called alopecia (peladique). One is a trophoneurosis. The other is due to a parasite which acts indirectly on the hair papilla through the mediation of the nervous system.*

MEDICAL PROGRESS.

TREATMENT OF WHOOPING-COUGH.—FRIEDRICH SCHILLING (*Münch. Med. Woch.*) has treated sixty-two cases of whooping-cough by means of inhalations of chloroform, the patients varying in age from 10 weeks to 12 years. A tablespoonful of tepid water is poured into the boiler of an atomizer, and as many drops of chloroform are added as the patient is years old. If after a week's treatment no improvement is observed, three times as much chloroform is used. Nothing but cold water is placed in the cup which receives the tube from the atomizer. As the chloroform evaporates before the water, the patient should begin the inhalation a little before the aqueous vapor appears. The inhalations should continue until all the water has evaporated from the boiler; they should be repeated four times in 24 hours. The good effects of this treatment are manifested in a few days; in a week the coughing spells diminish in intensity and frequency. In half of the cases treated by Schilling the convulsive period was replaced by the catarrhal period after two weeks of treatment. In no case has the reporter seen the persistence of the convulsive cough to the fifth week. On the contrary, four cases were cured in the first week; in twenty-eight cases the catarrhal period was reached by the end of the second week; in twenty-one by the end of the third week, and in eight cases in the course of the fourth week.

Inhalation of the vapor of carbolic acid previously employed by the reporter, gave less satisfactory results; on an average the convulsive period lasted until the fourth week.

As for antipyrin, although it may be true that it has effected some rapid cures, it has also completely failed in others.

Nasal insufflations of benzoate of sodium have given very uncertain results. Such insufflations, and indeed the vapor of carbolic acid as well, are very disagreeable to children, while they willingly inhale chloroform.

DOSAGE OF EXALGINE.—In a recent thesis GONDINAU insists upon the antithermic properties of exalgine, which constitutes, according to Dujardin-Beaumetz, one of the best substitutes of antipyrin. The dose is from 0.25 to 0.60 centigrm. at one time in 24 hrs. Exalgine is not soluble in cold water, but it dissolves readily in weak alcoholic solutions; it has no taste, and may be given in powder or in aromatic solutions. A good formula is the following:

Exalgine	2 grm.
Tr. orange peel	5 grm.
Syr. orange flowers	30 grm.
Distilled water	128 grm.

Each tablespoonful contains 0.20 centigrm.

—*Jour. de Méd. de Paris.*

THE CAUSES OF ACQUIRED IMMUNITY FROM INFECTIOUS DISEASES.—After giving a résumé of the ideas of Jaccoud and Bouchard on this subject, JASIEWICZ makes the point with them that immunity is first acquired by the presence of microbes and soluble substances secreted by them, and then by the vitality of the cells creating a constitutional state comparable with natural immunity. But this immunity is temporary, and even if it appears permanent it is because the individual conditions have changed; in fact it is influenced by species, race, individuality and age. Thus, the adult dog is refractory as regards splenic fever, while the young dog succumbs to it. The natural immunity of the fowl to the same disease is destroyed by lowering its temperature.

Jasiewicz draws the following practical conclusion: The immunity conferred by infectious diseases or vaccination being transitory, it becomes necessary to vaccinate frequently. He believes also that the organism thus acquires not merely an immunity from the disease against which it is inoculated for, but also against other virulent affections. He believes that morbid entities are not as dissimilar in their causation as they appear, but that they may be transformed, the one into the other, according to the mode of entrance of the disease, or the particular condition of the soil in which they are received. This somewhat audacious theory has been stubbornly defended by its advocate for several years.—*Jour. de Méd. de Paris.*

TREATMENT OF CHRONIC ADENITIS AND COLD ABSCESS BY INJECTIONS OF NAPHTHOL.—In his inaugural thesis DR. H. LASSERRE mentions the following objections to the treatment of these cases by means of iodoform ether:

1. Violent pain produced by the sudden distension which follows the injection. This distension sometimes leads to extensive sphacelus of the skin, or to compression of neighboring organs.
2. A very slow cure, because the injections must be made at points widely separated from each other, and must be repeated three or four times.
3. The danger from ether, which sometimes causes profound sleep.

Furthermore, iodoform, when injected into large, irregular cavities, may produce poisoning.

Naphthol is a harmless and powerful antiseptic, and is comparatively insoluble. One gram may be dissolved in a litre of water with the addition of 50 grams of alcohol.

The strong solution of Brouchard is recommended for injections:

Naphthol B	5 grams.
Alcohol (90°)	33 "

Warm distilled water, q. s. ad. 100 c. c.
Filter while warm.

When required for injection the flask is plunged in a hot water bath. The syringe, meanwhile, is placed in a warm antiseptic solution. These precautions are taken to prevent the precipitation of the naphthol and clogging of the needle or trocar. The pus is evacuated and the antiseptic solution slowly injected.—*Le Bul. Méd.*

SUSPENSION TREATMENT OF TABES DORSALIS. —DRS. BIANCHETTI and MORINA give the results of their experience in the suspension treatment of tabes dorsalis, etc. The former reports eight cases of tabes treated in this manner. In three cases the treatment had to be discontinued on account of impairment of sight produced; in five excellent effects were obtained, the lancinating pains, the gastric and bladder disturbances, the incoördination, the weakness of the lower limbs and the sexual impotence being markedly influenced for the better. The number of séances varied from 20 to 53. The favorable effects of treatment were also seen in the improvement of nutrition. The frequency of the pulse and respiration was increased during suspension and the spinal column was increased in length from 2 to 4½ ctm.

Dr. Morina reports 21 cases of tabes treated by this method, together with cases of spastic paralysis and paralysis agitans. In about one-half of his cases improvement was obtained by suspension, while, on the contrary, the treatment was badly borne by other individuals and had to be discontinued.—*Congress of the Italian Med. Assn., 1889.*

A CASE OF LIPOMA.—BILLROTH reports the case of a patient with an enormous development of fat. Diffuse lipomata, he says, of congenital origin, are sometimes seen on the hands and feet and are often associated with syndactylus and polydactylus. Certain cases are also seen in which we may speak of lipomatosis, which appear as non-capsulated lipomata upon various parts of the body, especially the neck and throat. In the present case the arms and shoulder regions are of enormous size, while the forearms are rather slender. From the history it appears that the trouble began to appear six years ago, with redness, swelling and pain. The redness and pain disappeared, while the swelling increased, until three years ago. If the history is correct, the case may have been one of erysipelas, followed by elephantiasis.

ACID SUBLIMATE SOLUTION IN DIPHTHERIA. —DR. WM. KRAUSS has translated for the Memphis *Journal of the Medical Sciences* an article by DR. REMERT, of Frankfort on M., upon the above subject, of which the following are the essential points:

The solution employed is that of Laplace, one part of sublimate and five of tartaric acid to one thousand parts by weight of water. The object of the acid is to prevent coagulation of albumen, which often acts as a barrier to the action of the drug. Forceps are wrapped firmly in absorbent cotton, saturated with the solution, and with them the membrane is ripped off from below upwards. This is repeated in an hour. After this, simply touching the denuded spots twice daily with the solution is all that is required. The one aim of the treatment is to remove the infection mechanically. This is not, however, an easy or a pleasant procedure, and in order to carry out the treatment successfully great energy is needed.—*The Obstetric Gazette.*

DURING the past year five surgeons have died in India from cholera contracted in the discharge of their duty.

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SATURDAY, FEBRUARY 15, 1890.

OCULAR DEFECTS AND NERVOUS DISEASES.

At a meeting of the New York Neurological Society, March 1, 1887, DR. GEORGE T. STEVENS read, by invitation, a paper entitled "Irritations Arising from the Visual Apparatus Considered as Elements in the Neuroses," the main proposition of which was expressed by him as follows:

"Difficulties attending the functions of accommodating and of adjusting the eyes in the act of vision, or irritations arising from the nerves involved in these processes, are among the most prolific sources of nervous disturbances, and more frequently than other conditions constitute a neuropathic tendency."

This conclusion was said to be based upon observations of more than five thousand cases of nervous diseases in private practice, and a considerable number of cases in public institutions. He illustrated his views by histories and photographs of cases, principally of chorea and epilepsy, in the latter of which diseases especially he reported very remarkable results from treatment based on this theory. Out of sixty-four consecutive cases of well-marked epilepsy, in which treatment had been directed, with one exception, exclusively to ocular conditions, thirty-two had remained free from attacks for a time varying from several months to seven years; twenty-one had shown such marked improvement as to indicate that the ocular conditions were the cause of the disease; and although eleven cases had, thus far, proved refractory to treatment, he believed this to be due rather to the complicated nature of the ocular disorders than to independence of the two conditions. In the causation of epilepsy he laid more stress on insufficiencies of the external muscles of the eyeball than on errors of refraction and accommodation. The treatment of these incoördinations by glasses he had found unsatisfactory, and preferred, in most cases, to restore the balance of the muscles by graduated tenotomies.

In the discussion which followed, DR. AMBROSE L. RANNEY endorsed the statements of Dr. Stevens from his own experience, and he has since embodied substantially the same views in his recently published work on nervous diseases.

The novelty and importance of the opinions advanced naturally excited much interest and some incredulity, and the proposition was made to test the correctness by trial on a series of cases to be treated by Dr. Stevens, under the observation of a committee of the Neurological Society. The committee, as originally constituted, consisted of Drs. E. C. Seguin, W. R. Birdsall and M. A. Starr, neurologists, and W. O. Moore and David Webster, ophthalmologists. To these Drs. C. L. Dana and F. P. Foster were afterwards added, at the request of Dr. Stevens.

The committee reported at a meeting of the Society, November 5, 1889, and after the reading of their report an elaborate reply was read by Dr. Stevens.

By agreement the enquiry was limited to epilepsy and chorea. Twenty-eight cases were furnished, of which fourteen were rejected as unstable, or did not remain under treatment long enough to warrant their being reckoned in estimating the results. Of the remaining fourteen, five were cases of chorea and nine of epilepsy. They were treated solely with a view to remedying ocular defects, and remained under treatment for periods varying from four to thirty months. One patient is mentioned as having had twelve operations and worn twelve different kinds of glasses. The committee report that none of the patients are cured; three cases of chorea and one of epilepsy are improved, one case of chorea very much so, and two cases of chorea and five of epilepsy unimproved. The result in the remaining case is not known. Some of the patients are said to have more numerous attacks than when under treatment with bromides, and in several cases double vision is reported as a consequence of the operations. The main result of the investigation is summed up as follows:

"In view of these facts, your Committee cannot but express the opinion that, so far as this investigation has warranted a conclusion, the method of Dr. Stevens does not afford a sufficient degree of relief to warrant its adoption or recommendation to the members of the Neunological Society as a means of cure, or as the sole therapeutic measure. It will be noticed that none of the cases have been cured—all remain indefinitely under treatment, a perfect ocular equilibrium not having been secured in any case. If it is impossible to secure such equilibrium, a cure is not to be expected, granting the theory of Dr. Stevens. If it is possible to secure such equilibrium, it is to be supposed that it can be secured within at least two years, yet four of these cases have been under constant treatment for two and one-half years without this result."

Dr. Stevens claimed that all of the fourteen patients who remained under treatment long enough to give his method a fair trial had been benefited—some of them very much so—and supports his opinion by certificates of several well-known physicians who have examined some of the patients in question.

There is no question that serious nervous disturbances often arise from over-exertion of the muscles employed in accommodation and convergence, and that their cause is sometimes overlooked, even by competent neurologists, and if the profession generally should jump at the conclusion that because Dr. Stevens has not, apparently, accomplished all that he claimed in regard to a disease that has always been one of the opprobria of medicine, there is no use in enquiring into the condition of the eyes, in any case in which they are not obviously at fault, it would be very unfortunate.

RESPONSIBILITY IN JOURNALISM.

Medical journals and medical societies, generally take pains to announce that they do not hold themselves responsible for the expressed opinions of their contributors and members; nevertheless there are bounds of propriety, dignity and morality which they cannot transcend without violating duties which they owe to themselves, to the profession and to the general public. When these duties are disregarded the offenders become powerful agents for the dissemination of pernicious influence. It is not sufficient to disclaim responsibility for individual expressions when these expressions are positively derogatory to the character of the journals or societies which give them publicity. The public makes no fine discriminations, and an unworthy utterance borrowing a guise of respectability from its associations goes forth with the bravest appearance of virtue and integrity to delude the thoughtless and unwary.

These remarks are suggested by the perusal of an article which appeared in the September number of the *Medico-Legal Journal* of New York. In the table of contents it appears thus: "*Abortion, Anonymous.*" One need only read it to learn why it is anonymous—the writer dare not append his name to it. It is a weak defense of criminal abortion the object of which is to show that all our laws on this subject should be repealed and women left in peace to destroy their children as fast as they choose. We are not a little surprised that the *Medico-Legal Journal* should have lent its pages to such an article as this. We are informed that "authors whose articles appear (in the *Medico-Legal Journal*) with their names, are solely responsible therefor." Who then is responsible for the anonymous articles? To permit such an occurrence as the anonymous publication of so disgraceful an essay as this one to pass without remonstrance is merely to invite a repetition of the offense. There have been times when there was good excuse for anonymousness, but they were times of despotism and terror. There is no excuse for it to-day, least of all in medical journalism.

"DRAIN SORE THROAT."

In the *Montreal Medical Journal*, September, appears an abstract of a paper by DR. J. C. CAMERON, in which he applies the term "drain sore throat" to an affection not infrequently observed, but very frequently difficult of explanation as to its causation. He was recently called upon to treat ten cases of sore throat in the same family. The malady was of a marked adynamic character and was accompanied by a rash somewhat resembling that of scarlet fever; in six of the cases there were both enlargement and ulceration of the tonsils; and at the outset of the suppuration in tonsils the appearances were strongly suggestive of diphtheria. Suspecting that the drainage might be at fault, Dr. Cameron caused it to be examined and defects were found in the ventilation of the soil-pipe, sufficient to cause a pollution of the house atmosphere. These seem to belong to a class of cases which, when seen out of series, or where defective drainage has not been or can not be discovered, has repeatedly baffled diagnosis and has frequently mystified the collector of diphtheria statistics. The scarlatiniform rash is also the occasion of mystification, when the throat trouble is less markedly developed than it was in Dr. Cameron's family of sick people. And even where the cases occur in multiples, and where the drainage defects are manifest, there will be room for differences of opinion as to the propriety of classing such cases as diphtheria. Practitioners who have had a marked degree of success with some favorite plan of treating diphtheria will be strongly tempted to look upon the generally favorable termination of this class of cases as one of the beneficial results of their efficient medication. There has been a variety of appellations attached to this disease, such as "drain fever," "diphtheroid," "tonsillar diphtheria," "diphtheritic sore throat," "diphtheria without membrane," and "scarlatinal tonsillitis," according to the different standpoints of the different observers; but the term employed by Dr. Cameron is the clearest and the least suggestive of error. It is not an alarmist's term; it has little of dread in its sound and implies, withal, the idea of prevention, upon the removal of the sanitary defect. These are two points that are eminently desirable in the selection of a terminology which must be pronounced at the bedside and among the laity. In the absence of a knowledge of the true, specific cause, the term "drain sore throat" has the right of currency in that it is clear, measurably descriptive and helpful towards sanitation; but the most commendable point is that it distinctly draws the line between this form of throat affection and genuine diphtheria.

MEDICAL COLLEGE CONFERENCE.

It is obvious that the leading medical colleges in this country have been in the main responsible for the present standards of requirement for medical graduation. The creditable advances thus far secured were attained largely through their instrumentalities. In the future, the power of their concerted influence must largely affect legislation in the several States. We believe that no men in the profession are so well prepared to formulate the higher standards which are needed as are those prominently connected with our leading medical institutions.

It seems eminently desirable that a conference of such men should be held, and that at an early day. Extended discussions, debates and writings have paved the way, and the time is at hand for judicious action. The medical colleges, the medical profession and the State Legislatures should make common cause in this matter, nor rest satisfied until a creditable standard of medical education is made an imperative condition to the practice of medicine in every part of the United States.

We are specially interested in the action of yesterday, February 7, on the part of the medical colleges and schools of Maryland, which comes to us by telegraph.

> "BALTIMORE, Md., Feb. 7.—The medical colleges and schools of Maryland, in conference here to-day, issued an appeal to the medical colleges of the United States, asking them to send delegates to the approaching convention of the American Medical Association at Nashville, Tenn., with a view of effecting a reform in the methods of medical institutions in vogue in this country. The following subjects are considered as most likely to come up for discussion: 1. Three years' course of six months' session. 2. Graded curriculum. 3. Written or oral examinations. 4. Preliminary examination in English. 5. Laboratory instructions in chemistry, histology and pathology. There are two schools in Baltimore—the Maryland University and the Johns Hopkins Hospital—that have already adopted the three years' course, but their assistance was asked in the movement and it was promptly given."

We sincerely hope for, and anticipate, a hearty response to this circular on the part of all American colleges which have at heart the advancement of medical education. The time named, the place, and the simultaneous meeting of the Association are opportune. The Convention should be conspicuous for its numbers, for the wisdom of its counsels, and for its formulation of methods for future action.

DR. CHARLES S. WOOD, who was recently elected President of the New York County Medical Association for a second term, died February 1st of Bright's disease. Further reference to his death will be found in the present issue.

The percentage of increase in the different cities from the time the disease manifested itself to February 1 is: Boston, 2.07; Chicago, 1.12; New York, .51; Baltimore, .263; Cincinnati, .680; Washington, .208; Philadelphia, 1.20.

Occasionally it has been found that when an epidemic of influenza occurs epizootics of the same character prevail among horses, dogs and cats. This was especially the case in 1872–73 in this country, and I am told that cases among horses have recently been noted in Chicago.

A close estimate of the mortality in the Northern States from the disease of influenza so far would reach about 10,000. The disease is gradually spreading southward, but owing to the higher temperature, it will manifest its usual benign character. Relapses occur and the great care must be exercised by the victims while recovering. *This was especially noticeable at Odessa and Copenhagen. Its fatality was equaled only once before, and that was during the autumn and winter of 1789–90—* just a century ago.

Influenza and Cholera.—One of the most distinguished medical authorities in St. Petersburg recently announced the firm conviction that cholera would follow the epidemic of influenza in Russia, as it had for six times in the past. Dr. Hirsch, who is the best authority on epidemics, is of the opinion that it was an accident, and I concur with him. It is true that in November, 1830, influenza prevailed in Russia before the cholera made its appearance. In January and February of that year the influenza also prevailed in Russia, in March in Poland, April in Germany, May in Austria, Denmark, Belgium, France, Switzerland, England, Scotland and Bohemia, June in Germany, England and France, July in Germany, Switzerland, Sweden, England and Italy. During this time cholera prevailed in Russia, Germany, England and France. In November, 1831, influenza prevailed in New Jersey and Pennsylvania. In November, December and January in the Middle States. In February, 1832, it made its appearance in Georgia. Cholera did not make its appearance in Canada and the United States until June, 1832. In 1833 influenza prevailed in nearly every country in Europe. In 1833–34 outbreaks of cholera occurred in the United States, but there was no influenza. In June, July and August, 1843, influenza prevailed in the United States more generally, with the exception *of this pandemic, than ever before, and there was no cholera* in the country. In 1847–48 influenza was generally diffused over the Eastern Hemisphere. Cholera was introduced into New Orleans in 1848, and there was influenza in California in January, 1851. There were also cases of cholera in the United States in 1852–54, without any influenza. From January to March, 1873, influenza prevailed generally throughout this country, while cholera was introduced at New Orleans in February; but there was cholera in 1866–67 and no influenza. But the visitation of cholera in 1873 was limited to the valley of the Mississippi.

There is no doubt that at this time there is a pandemic wave of disease spreading over the world, commencing with cholera last July, August, September, October and November in Mesopotamia, kept back by the temperature and cordons from spreading northward and westward, but crossing the Turco-Persian frontier and raging as an epidemic in Central Persia, and at this time is finding its way north. I shall not be at all surprised if cholera obtains a foothold in Russia by way of the Caspian Sea in consequence of the generally bad sanitary condition of Russian towns and villages. But I don't believe that it will spread beyond into the German and Austrian Empires, because of the sanitary precautions taken by the authorities.

In the report on this subject made at the last meeting, September 27, 1889, I said: "It is too early yet to tell whether the present outbreak is the beginning of a new pandemic. In reviewing the introduction of cholera into Europe, it will be seen from the foregoing that in four pandemics it found its entrance by the same routes as the present. Fortunately the near approach of winter will materially assist in preventing its spread or in totally stopping it, independent of the more care now being exercised by the sanitary authorities to prevent its spread than heretofore. While the probabilities are that it may be arrested, still the indications must not go unheeded by those in charge of sanitary matters."

By the 10th of November cholera had spread to the city of Mossul, and by the 1st of December had invaded three-fourths of Mesopotamia and the Turco-Persian *frontier, although the mortality of the disease was great*ly diminished. Apparently *held in check by sanitary* cordons and the lower temperature, *recent advices show* that it has *made considerable inroads into Persia*, having crossed the Turco-Persian frontier at a number of points. In Central Persia there has been an alarming increase and the inhabitants are fleeing northward toward the Russian ports on the Caspian. A St. Petersburg dispatch of January 27 says that Persian Khorassan is ravaged by an intestinal disease of excessive fatality, its exact nature unknown, 3,000 deaths being reported. At Nur, in Meshed, a district in Upper Persia, as many as 100 deaths occur daily. This town is only a short distance from the Caspian Sea.

"Remembering that this is the route into Europe which cholera has so often taken before," says the London *Lancet*, "the announcement will be regarded as one of no little gravity, the more so because the Caspian port towns and fishing villages have a bad reputation in regard to those sanitary conditions which *are known* to favor the diffusion of cholera." It is also reported that the epidemic at Bagdad, which had abated toward the end of November, is raging again with renewed fury.

IS THE INFLUENZA CONTAGIOUS?

It is exceedingly difficult to ascertain definitely whether influenza is really contagious, but the history of the present epidemic renders this opinion probable. Coming in a wide-spread wave, extending over an enormous extent of country at *once*, it is the type of a Pandemic. But the eccentricities of its spread render such an explanation *unsatisfactory*. We *have* had the affec*tion* here, beyond any reasonable doubt, for four weeks. Yet we hear of its extending, even at this late date, to towns in Europe hitherto unaffected; although in *other* and neighboring places it *has* subsided some time ago.—*The Times and Register.*

PRACTICAL NOTES.

CHRONIC RETENTION OF THE URINE.

Englisch divides these cases into two classes: 1. Where there is relative insufficiency of the bladder; 2. Where this insufficiency is absolute. The disturbances arising from this insufficiency react not only on the urine, but also on the bladder itself, as well as on the general constitution. One invariable symptom is the constant desire to urinate. In the beginning this is painless, but later it becomes intensely painful. In some cases the urine is clear and acid when passed, but it becomes alkaline and cloudy on standing a short time. Quite often, just at the end of the micturition, a drop of blood is passed, which is caused by the rupture of one of the small veins in the neck of the bladder. The general symptoms at first may be so slight as not to attract attention, but later they are pronounced, especially when the kidneys are affected.

In mild cases, warm baths will stimulate the bladder to contract; in more severe cases, cold applications to the perineum are of service. If this is not sufficient, recourse must be had to the catheter, without delay.

Polyuria has been observed when the entire quantity of urine has been drawn off. To avoid this, it is advisable to draw off eight to ten ounces, and replace it with an equal quantity of of four per cent. solution of boric acid, which may be repeated in a few hours. As the condition improves, the catheter need be passed but once in twenty-four hours.—*The Times and Register.*

DIABETIC DIET A SUBSTITUTE FOR ARTIFICIAL PREMATURE LABOR.

Prochownick (*Arch. d'obstet. et de gyn.*, Oct,, 1889) comments upon the unsatisfactory results of premature labor, so far as concerns the child. The high mortality of infants prematurely born has led him to seek a substitute. This he appears to have found in the old and abandoned practice of restricted diet. He reports in detail three successful cases which he treated, during the last few weeks of gestation, with a dietetic treatment entirely analogous to that of diabetes.

In his first case, perforation, version and premature labor had been successively employed in previous births. The dietetic regimen was pursued for two months before her last accouchment. The result was a small living child, whose cranial vault, though hard, was still plastic. The child remained healthy and grew rapidly.

His second case was a dwarfed and scoliotic woman whose first delivery was by cephalotripsy, the second by difficult version, the child dying in four hours, the third by premature labor, the child dying at the fifth week. In the fourth pregnancy the author placed the patient on the restricted diet during the last five or six weeks. The child was a male and at birth weighed little more than two-thirds the usual weight. It however presented all the signs of maturity so far as regards the diameters of the head. It lived and throve.

The third case was a secundipara whose first child had been sacrificed by craniotomy. She was placed on the dietetic treatment for four and a half weeks and was delivered at term of an undersized child which lived.—*Brooklyn Medical Journal.*

USES OF BORACIC ACID.

Dr. Lebovicz, in the *Weiner med. Presse*, narrates some uses to which he has put boracic acid.

1. Boracic acts antiseptically. Every soldier should carry an ounce of it in his overcoat pocket, and a handkerchief cut into two triangles for necessary bandages. Simply sprinkling a wound with finely powered boracic acid suffices to insure rapid healing. This remedy being odorless and itself absorbing all odors, the author has used it advantageously in abscesses, ulcers of the feet, caries and necrosis of the bones, and in complicated fractures.

2. In anthrax and after the incision of furuncles it acts well when applied directly to the parts. Forming furuncles should be painted several times daily with the following:

℞.—Boracic acid }
Water, } . . . . āā equal parth

3. In burns, where the flesh is exposed, it is necessary to be careful with poisonous antiseptics. Boracic acid possesses the advantage of being non-poisonous. He covers the burnt surfaces with a boracic vaseline ointment in the proportion of one to five:

℞.—Boracic acid (finely powdered) 20 parts
Glycerine . . . . 15 "
Mix, and add,
Vaseline . . . . 85 " ɱ.
Apply twice daily.

In severe burns with fever, the author combated the fever by the internal administration of the following:

℞.—Boracic acid . . . . 4 parts.
Glycerine . . . . 10 "
Water . . . . 100 "
Syrup of poppies. . . . . . . 25 " ɱ.
Sig.—A teaspoonful every two hours.

—*The Pacific Record.*

GLYCERITE OF CALF PEPSIN.

Dr. Frank Woodbury advocates the use of a solution of calf pepsin in glycerine, to which he gives the name of glycerite of calf pepsin, as an adjunct to a milk diet for those who are unable to digest the casein of cow's milk, and he claims that calf pepsin is a more suitable and natural preparation to be used for such a purpose than that obtained from the hog. The process of manufacture is as follows: The stomachs of healty young calves are washed clean with running water, the mucous membrane is dissected off, crushed and treated with glycerine and slightly acidulated water, in which it remains until the pepsin is all extracted, the solution is then filtered carefully, and to it is added a small proportion of the acid phosphate of lime. to insure a faintly acid reaction in the finished product. A drachm of this solution readily acts upon a pint of milk. In the case of infants he recommends that from ten to twenty drops of the pepsin solution shall be given fifteen or twenty minutes after feeding; in adults from one half to one drachm is added to the milk before it is swallowed. Junket made with the glycerite of pepsin from either boiled or unboiled milk is a delicate and easily digested form of nourishment for the sick. —*Brit. Med. Jour.*

EUCALYPTUS IN CANCER.

I lately had a case of cancer of the breast in which the ulcerating surface was about eight inches by six. The odor from the discharge was most sickening and offensive, and it was made worse by the odor of the carbolic acid which they were using. No one could remain long in the room with the patient on account of the intolerable smell. The carbolic acid was stopped, and the eucalyptus disinfectant used. The wound was sprayed with it, as also the lint with which it was dressed; tenax was wetted with it and placed under the wound to catch the discharge, and, by the use of a spray diffuser, the air of the room was filled with the fragrant odor of the eucalyptus. All offensive smell at once ceased, and there was only the smell of an ordinary suppurating surface.

In a case of cancer of the sigmoid flexure where the discharge was frequent and very offensive, the injection of a small quantity of eucalyptus emulsion twice a day stopped the offensive odor, and checked the frequency of the discharges. And in a case of cancer of the neck of the uterus, the offensive smell was stopped, the discharge lessened in quantity, and the tendency to hæmorrhage diminished.—J. Brendon Curgenven, *Brit. Med. Jour.*

SALOL IN BURNS.

The favorable influence of salol in burns, communicated by Tato and Cabatelli, has probably also to be explained by the action of lanolin, with which the authors combined salol as a 3 per cent. ointment. The addition of salol or ichthyol to lanolin he thinks unnecessary for the said purposes.—*Provincial Medical Journal*, Halifax, Eng.

SOCIETY PROCEEDINGS.

Medico-Legal Society of New York.

Annual Meeting, December 18, 1889.

CLARK BELL, ESQ., President of the Society, read a paper on

HYPNOTISM.

The medical profession in America do not give this subject the attention its importance deserves. We know of no medical man of prominence in America who has publicly identified himself with the investigation of this science as some of the most eminent men in foreign countries have recently done.

Dr. Wm. A. Hammond, some years ago, gave the subject considerable attention, and gave public experiments before the Medico-Legal Society, of patients under its influence, exhibiting the usual phenomena of unconsciousness to pain, and entire domination of will power and of action.

The late Dr. Geo. M. Beard was also a student of this phenomenon and, had he lived, would doubtless have contributed to, and have been now conspicuously at the head of the science here. A few physicians here and there have touched it on the border lines, but, as a profession, medical men in America know little concerning it, and the public, who naturally look to them for advice on such subjects, are entirely ignorant of this phenomenon, or the progress made abroad in the investigation of the science.

Hack, Tuke, Ireland, Matthias Roth, Gurney, Myers, in England; Charcot, Binet Fére, Gilles de la Tourette, Paul Regnard, Fontan and Séquard, Azam, H. Beaunis, E. Berillon, Ochorowicz, Ladame, Delboeuf, Montin, Voisin, J. Luys and others, in Paris; Lombroso, Tamburini, Sepilli and others, in Italy; Heidenhan and von Fränkel, in Germany; Gessman, Obersteiner and Kraft-Ebing, in Austria; Broberg and Fred. Björuström, of Sweden, are some of the names of recent authors abroad who treat upon this subject as a distinct branch of science. The experiments at Salpêtrière, conducted under the guidance of Prof. Charcot, have gone to the scientific world in detail for some years, and an International Congress of Hypnotism, experimental and therapeutic, was held at Paris from August 8 to 12, 1889, attended by distinguished men from Russia, Holland, Switzerland, France and other countries, where papers were read upon the propriety of interdicting, by law, public exhibitions of hypnotism, and for regulating its use or practice by legal statutes, as well as upon other phases of the science. The Paris *Revue de l'Hypnotism* is entirely devoted to this science.

In the Medico-Legal Society in January, 1889, the chair called attention to the medical neglect of this subject, and named a committee to make investigations through the year and report their labors to that body. The majority of the committee did not go forward with the work, and the committee was reorganized, but have, so far as known, made no report, if even they have done any work whatever since their reorganization.

At the recent session of the Psychological Section of the British Medical Asssociation, held at Leeds August 15, 1889, under the Presidency of Dr. Hack Tuke, Dr Auguste Voisin, one of the physicians of la Salpêtrière, Paris, made a communication upon the treatment of insanity and neurosis by hypnotic suggestion and on the application of the method to the moral and instinctive perversion of backward and imbecile children, in which he is reported to have said that, until within the last few years, no serious attempt had been made in this direction, and that it was generally supposed that the insane could not be hypnotized. He had been able to develop this method in his hospital and private practice. Catalepsy ought to be carefully avoided, because the hypnotized individual ought to be able to preserve the use of his senses, especially of hearing. He was convinced that hypnotism was only useful when it was possible to make use of suggestion; and he was firmly of opinion that, as Braid had said, the hypnotic state originated in the nervous system of the hypnotized person. The basis of hypnotic treatment and of suggestive therapeutics detailed the various categories of the insane with regard to whom he had made observations. By this treatment he had cured persons suffering from hallucination and delusions, and from disturbances of special and general sensation. Suicidal ideas and acute and furious mania had disappeared under the use of this method. Cases of insanity were cited which had only been calmed after several hours. The treatment had also succeeded in the mania and agitation observed during the catamenia. Patients in this category had even remained asleep for from six to eight days. The method had also succeeded in dipsomania and in morphinomania. He had also been fortunate enough to cure obstinate cases of onanism in this way, and had applied the method *à la moralization des enfants dépravés*. He had thus completely transformed their habits of thought, and had brought them to love the good, whereas formerly they had loved only the evil. He had also succeeded in curing amenorrhœa in the insane, which was a frequent cause of nervous and mental troubles; he particularly insisted upon this point as proving it was possible to influence the functions of the sympthetic system. The relapses were not more than one-tenth of the cases treated, and this was probably due to the repetition of treatment over a few months. However, the results were definite, and he hoped the practice would be tried in England and have good results.

He said that for success in the hypnotizing of patients many attempts were frequently necessary. Hence he could not give a suitable demonstration at Wakefield; but his place at Paris was open to all the physicians of the Continent. It was immoral to hypnotize healthy persons, being only proper in the case of the diseased. He repeated his statements as to the ailments which could be serviceably treated. For success varied processes were often necessary.

The importance of the subject cannot well be overestimated. Our judicial tribunals are wholly unprepared for the investigation of crimes thus committed.

A prominent judge upon the criminal bench of this city has, as it has been said, expressed doubts as to the existence of such a state as the hypnotized condition, which would affect responsibility for acts committed in that condition.

The public mind cannot be said to recognize it, and the learned and honest judge reflects popular opinion and popular ignorance of the subject.

It is doubtful if the legal profession, as such, are *en rapport* with the scientific truths of this branch of science, as recognized in France judicially in the tribunals.

It is probably true that three-fourths, if not more, of the medical profession in this country are ignorant of what has been demonstrated at Sâlpetrière, and what is recognized as scientific truth at this moment in all foreign schools or universities of learning as to this phenomena. It is no longer an open and disputed question in France, Austria, Italy, Russia, Germany. It is an accepted scientific fact. What is now studied is its phenomena, its problems, its sequella. It is a recognized fact; but what are its phenomena and limitations, is the remaining question.

The questions raised by the editor of the *New York Ledger* are immensely significant and of the greatest importance to the race.

How far can hypnotism, properly administered, be used as an incentive to higher education?

How can it be used as a moral remedy to correct evil habits, bad practices or evil inclinations?

How far can it be used as a means for moulding character and lifting the aspirations to nobler ideas and higher planes of action and of life?

These are the questions of the hour, and these the subjects which should arrest the attention of the learned committee of the Medico-Legal Society.

The Humboldt Publishing Company of this city have taken up the subject, and have published the work of Prof. Fred. Björnström, of Stockholm Hospital, translated by Baron Nils. Posse, M.G., of Boston.

Chapter xi of this work treats of "Hypnotism and the Law." We quote:

Hypnotism comes in contact with the law at more than one point, and many and intricate are the medico-legal questions which it has already raised. The most important of these questions are:

1. Can the hypnotized be physically or mentally injured by hypnotism?
2. Can the hypnotized fall victim to crime?
3. Can the hypnotized be used in the service of crime as a ready tool without a will?
4. Are the hypnotized responsible?
5. Should hypnotism be prohibited?

We regret that want of space prevents our giving the whole of the chapter which contains an answer to these questions.

The American Journal of Psychology has devoted more space and attention to this subject than any scientific journal on this side of the sea. Its editor is Prof. G. Stanley Hall, President of Clark University, and this journal, while not reproducing an original article from an American author upon this topic, so far as we can recall, has devoted considerable space in its psychological literature to "Hypnotism," as a subject or subdivision, and in this department has noticed and reviewed very much of the recent foreign literature of this department of science, and has also noticed quite generally what has appeared in our American and in the foreign press on this topic.

Prof. Stanley Hall is perhaps one of the best educated and equipped men this side of the Atlantic to lead in these investigations, outside of organized bodies or societies.

His journal must take notice of and record all discoveries, especially as to judicial or medico-legal questions arising affecting responsibility or related to criminal anthropology.

Dr. Ed. J. Cowles, of McLean Asylum, and Dr. Wm. A. Noyes, of the Experimental Station there, are qualified eminently for this work, while Fred. Peterson, M.D., Frank H. Ingram, M.D., M. Allen Starr, M.D., of New York, and others of the junior rising medical men, will doubtless do valuable work in this domain in the near future.

We learn that Dr. Jastrow proposes to prosecute psychological research in the University of Wisconsin; that Dr. Cattell intends similar studies in the University of Pennsylvania; Dr. Wolfe in the University of Nebraska; Dr. James at Toronto; and that Prof. Ladd, of Yale, and Prof. James, of Harvard, will continue their important investigations in psychological and psychical research.

We look for important advances along the line in the coming years of 1890 and 1891.

The importance of these investigations upon medical jurisprudence, upon the tribunals and courts of justice is recognized abroad. Is it recognized here?

Much of what seems now a mystery of motive of action, so pertinent to legal and criminal responsibility, must, in some cases, be involved in this enquiry, The recent startling and, in many respects, almost incomprehensible case, in which the Hon. Ray Hamilton was so strangely affected, may be shown to be due to the well-defined phenomena of hypnotism.

It is difficult to understand certain phases and complications, in that, as in other curious and remarkable cases, to which our attention has been recently drawn, except by a study of the psychical phenomena of hypnotism.

A common and almost universal error is the popular impression that only weak, sickly, nervous persons, and especially hysterical women, were susceptible to hypnotism. This is a popular fallacy and error. Björnström says, upon this subject:

"Later experiences, and particularly the elaborate statistics of Liebault of Nancy, have shown that almost anybody can be hypnotized. A difference, however, must be made between those whom it is easy and those whom it is difficult to hypnotize.

"Among the former, belong without doubt the hysteric; but otherwise physicial weakness gives no special predisposition. The willingness of the subject, his passivity and power to concentrate the thought or attention on the intended sleep have more importance. Thus it has been found that even the strongest men from the lower classes (mechanics, laborers, soldiers,) are more easily put to sleep than intelligent persons, who voluntarily or involuntarily let their thoughts wander to various objects which distract their attention. It will often be found that those who cannot be hypnotized in the first, second or third *séance*, yet succumb to renewed patient effort."

It was the opinion of Dr. Edward Payson Thwing, as stated to the writer, who had conducted many experiments, that it was doubtful if there was any person who could not be hypnotized, who had sufficient will power to concentrate the thoughts upon a subject, to remain mentally passive, who would not mentally oppose or combat the influence of the hypnotizer, or who would mentally yield to it. That after long and repeated trials, under favorable conditions, with patient effort, every one would ultimately succumb.

It is a subject which should not be longer neglected or ignored, and to which the earnest attention of advanced students of medical research is earnestly suggested to meet the popular demand for light upon the science, and researches regarding its phenomena is now the duty of such of our medical men who are competent to grapple with the subject.

The management of the surgical clinic in the University Halle has been entrusted to Professor Oberst and Docent Dr. Krause, as the successors of Prof. Volkmann, recently deceased.

DOMESTIC CORRESPONDENCE.

A Small Solid Tumor in the Left Inguinal Region Caused by a Fish-bone.

To the Editor:—The following case seems to me worthy of publication from a diagnostic standpoint, the more so as our works of pathology and surgery give us very little information on this subject.

C. I., æt. 63 years, began to notice an enlargement in the left inguinal region about the end of last February, which at times caused some slight pain, and during the last two months seemed to increase rapidly in size. Dr. I. B. Rice, of this place, was kind enough to send the patient to my office, stating that, though he had not come to a definite conclusion, he had some apprehension that it might be of a malignant nature. On examination I found a hard, slightly nodular tumor, situated about 2 inches above Poupart's ligament, running parallel to it and about the size of a large thumb. It was not specially painful on pressure and could apparently be lifted off from the peritoneum. Examination per rectum revealed nothing abnormal, no connection between the bowels and tumor could be traced. As it was so hard and not really painful on pressure, an abscess was excluded in the diagnosis; it was also too solid for a lipoma. The thought of a foreign body entered also into our speculation, but then we expected more pain and some fluctuation. Taking the age of the patient into consideration, the circumscribed, hard and nodular condition of the tumor, I must confess that the diagnosis of a cancer could not easily be dismissed from my mind. I thought it, however, a wise plan to keep the diagnosis in suspense until the knife would unravel the secret. On August 6, 1889, I made an incision about 2½ inches long over the swelling through the obliqui muscles, and found that the tumor was really formed by the thickening of these muscles. This infiltration was again caused by a fish-bone lying in a vertical direction over the transverse muscle. It was not encapsuled, nor was there any sign of former or present suppuration. The parts really presented such a fresh appearance as if the bone had been pushed in there shortly before the operation.

Foreign Body in the Right Bronchus.—Drs. Smith and Cheadle, after reporting a case (*Med. Chirurg. Trans.*, Vol. lxxi, p. 113), give statistics of thirty cases of foreign body in the bronchus. In sixteen cases the foreign substance was lodged in the left and in fourteen cases in the right bronchus, thereby upsetting the statement that foreign bodies usually find their way into the right bronchus. The following case may deserve publication for the sake of statistics:

I. R., of Woodville, O., æt. about 11 years, showed symptoms of croup on the last of December, 1888. As he had similar attacks a number of times before and was each time treated by Dr. Busch, no special apprehension was at first felt. But as some days after the symptoms, instead of abating, increased in severity, the doctor questioned the family whether the boy had not eaten something that might have entered into his air passages. They could not think of anything at the time, but the next morning they told the doctor that they remembered having seen him eat hickory nuts shortly before his symptoms of croup set in. I saw the boy on January 10, 1889. Examination of both lungs revealed nothing abnormal; at least, if there was any sound indicating the presence of a foreign substance it was muffled by the croupous breathing. Auscultation of the trachea also did not give us any more light in the case. Tracheotomy was decided upon and I was assisted by Dr. H. Busch, of Woodville, and Dr. Wm. Busch, of Genoa, O. In two similar operations which I had made a few years ago, I succeeded readily in extracting the foreign bodies from the bifurcation with a long probe, the end of which was bent to a small hook as used for the extraction of foreign bodies from the nose or ear. I might mention that, after having tried the forceps advised in our surgical works, I have worked with more advantage with this simple probe. After I had introduced it in this case about a dozen times down to the bifurcation without any result and had examined the larynx carefully, it appeared very much to us as if we were fishing in troubled waters. We were almost ready to give up all search when the thought occurred to my mind that the body might perhaps be lodged in one of the bronchial tubes. Immediately I pushed the probe down into the right bronchus, where I felt some hard substance lodged tightly, so that on withdrawal a small part of the hook broke off. I was nevertheless able to pull up a piece of hickory nut shell the size of which was over ½ inch square. Patient made a good recovery.

M. Stamm, M.D.

Fremont, O.

Disinfection by Sulphur.

To the Editor:—In your Journal of February 8th I find an editorial on the "Correct Official Instructions as to Disinfection With Sulphur," in which article I find the following statement: "For a room 10 feet square use 3 pounds of sulphur, moistened with alcohol, *in an iron pan* placed in a tub containing a few inches of water, to avoid danger from fire."

I desire to call attention to a great improvement on the old iron pan, which I have discarded long since as cumbersome, dangerous, unhandy and troublesome. In the place of this pan I have a light sheet-iron stove made, much after the style of a tinner's furnace, with a double bottom, the lower one of which is raised some three or four inches from the floor by suitable legs. On the one side of this little furnace, on a level with the upper bottom, is a small vent, say 1 inch by 3 or 4 inches, for air, with a proper damper. A sheet-iron projection, with the edges turned up on all sides, is attached to the furnace in front and a little below the air-hole, to catch any coals that might fall out during use. The top of the furnace is simply a tight-fitting sheet-iron cap with a small pipe introduced on the one side of it, with a damper. To the whole apparatus is attached an ordinary bucket bail, for transferring it from place to place..

You now have a round furnace, say 6 or 8 inches in diameter, 14 to 16 inches high, with legs to keep it off the floor or carpet, an opening on one side below for air, and a tight-fitting top with a short 2-inch pipe in the cap. All you have to do is to remove the top and throw in a good bed of charcoal, on top of which you place the sulphur; add a little alcohol, replace the cap, open your dampers and touch a match, and you are ready for business; and besides you have a cheap, simple, complete and safe practical furnace that can be carried any place, and which I will guarantee will do its work well, and which can be kept going *ad lib.* by adding charcoal and sulphur when needed.

The entire outfit should not cost over three or four dollars, and will last for years, and can be safely carried any place, while in action or not.

This outfit is placed in the hands of the sanitary policeman, who keeps it at the fire department, where a supply of charcoal and sulphur are kept, and is ready for use on a moment's notice.

Very respectfully yours,

R. HARVEY REED, Health Officer.

Mansfield, O., February 10, 1890.

NECROLOGY.

Dr. Charles S. Wood

Died at his residence in New York City of chronic nephritis, February 1, 1890. He was born at Litchfield, Conn., February 27, 1825, and had but limited advantages of education in his youth. Until he was 26 years of age he taught school in Litchfield. He received his degree from Jefferson Medical College, Philadelphia, in 1851. At the breaking out of the war he offered his services as surgeon, and was attached to the Sixty-sixth regiment, New York Volunteers, but was subsequently promoted a surgeon, U. S. V. He had served in the Army of the Potomac, and was in most of the hotly-contested battles. Subsequently his service was transferred to California, where he organized and had charge of one of the military hospitals. He resumed his medical practice in 1867 in New York City, where he resided until his death. He was a frequent delegate to the American Medical Association, and was a representative of the New York State Medical Association, of which he was one of the founders, to the Ninth International Medical Congress at Washington, D. C. At the time of his death he was just entering upon his second term as President of the New York County Medical Association. He was also an ex-President of the New York Medico-Legal Society, and of the N. W. Medical and Surgical Society, as well as a member of similar other organizations.

As a physician he was esteemed for his practical turn of mind, his industry and his candid dealings with patients.

Sir William Gull, M.D.

Dr. William Withey Gull, a court physician and eloquent lecturer at Guy's Hospital, died January 29th, in his 75th year. He it was who carried the Prince of Wales through his attack of typhoid fever in 1871. In 1872 he was rewarded with a baronetcy and an appointment as an extraordinary physician to Queen Victoria. He had a fashionable and lucrative practice during the last fifteen years. He was President of the Clinical Society, D.C.L. of Oxford University, Goulstonian lecturer. His writings were chiefly on neurological subjects.

Sergius Botkin, M.D.

Dr. Sergius Botkin, the eminent Russian surgeon and medical writer, died at Mentone, Dec. 24, 1889, at the age of 58. His career during the past thirty years has been a most brilliant one, as writer, teacher, organizer of institutions and official. He was the body-physician of two Emperors, and yet the notices of his death recite invariably that in him the best friend of the poor of St. Petersburg has been taken away. He had the best of professional training in Paris and Bernard, Virchow, Ludwig, and at home under Pirigoff, whom he succeeded in many of his official appointments about 1861. His success as a teacher, at the Military Academy of St. Petersburg, in its medical department, as professor of therapeutics and clinical medicine, is said to be illustrated in the fact that not less than twenty of his pupils have been made professors in various Russian colleges. He was, without doubt, the best known of his country's professional men, outside of Russia.

Charles MacMillan, M.D.

Dr. Charles MacMillan, formerly Consul to Rome, died in Washington, January 8, after a short illness from pneumonia. During the late war, he served with distinction on the staff of

General Grant and in other capacities, and after the war was continued in diplomatic public life until after Grant's term in the Presidency closed. During recent years he has been in private practice at the Capital, and has served as medical referee to the Bureau of Pensions.

Dr. Hermann Brehmer,

the originator of the celebrated sanitarium for phthisical patients at Goerbersdorf, died December 23d of pneumonia, contracted during the influenza prevalence in Germany. It is stated that not less than 13,000 pulmonary cases resorted to his institution for treatment by him during his thirty years' incumbency at that place.

Sad Ending of a Health Trip.

Dr. E. R. Brownell, of East Hartford, Conn., died by his own hand, by shooting, December 28th, while on a visit to Barbadoes. He had gone to that point on account of ill-health, but not finding the relief he was in search of, became the victim of despondency.

ASSOCIATION NEWS.

American Medical Association—Forty-first Annual Meeting.

EXPOSITION OF PHARMACEUTIC, SURGICAL AND SANITARY PRODUCTS AND APPLIANCES—NOTICE TO EXHIBITORS.

The forty-first annual meeting of the American Medical Association will be held in the city of Nashville, commencing Tuesday, May 20th, and continuing till Friday the 23d. In connection with the meeting of the Association there will be held the usual exposition of pharmaceutic, surgical and sanitary products and appliances. This exposition is expected to be one of the largest and most interesting exhibits of the kind ever held. Pharmacists and others intending to exhibit their manufactures, etc., should address Dr. J. Berrien Lindsley, Chairman of the Sub-Committee on Exhibits, Nashville, Tenn., at once, as a large attendance is probable; and though the space available for exhibits is considered quite ample, the local committee desires to exercise care and deliberation in assigning space and arranging the exposition so as to present everything in the most attractive and effective manner. Choice of space will be given in accordance with date of application. For the accommodation of exhibitors the Committee on Exhibits has secured for a reasonable time an option on a building as suitable as can be obtained for an exposition of this character. This building is near the city postoffice and custom-house, on the widest thoroughfare in the city, convenient of access from all points, and only five minutes' walk from the place of meeting of the Association. It is all on one floor, a one-story brick building, detached, and well lighted, with large area of floor and wall space. To defray the expenses of renting this building and the other incidentals connected with the exhibition, each exhibitor will be required to pay an entrance fee of $10. This will entitle him to 25 square feet of space. For each additional square foot 50 cents will be charged. The committee will consider themselves as the agents of exhibitors for the mutual convenience of all concerned, but they will assume no responsibility for the safety of exhibits beyond the exercise of careful and vigilant attention. If insurance of any kind on exhibits is desired, it should be procured by the owner.

Applications for space must be made previous to the third Tuesday in April. Unless such a number of applications as will be a guaranty against loss is secured by the third Tuesday in March, the committee will abandon the effort to arrange for an exhibit. The local profession and the officials of the association are making every effort to secure a large attendance of physicians from all parts of the Union, and with every promise of success. An additional inducement to exhibitors is offered in the fact that the Tennessee Druggists' Association meets in Nashville at the same time, and will be in session from the 21st to the 23rd of May. This meeting of druggists is expected to be the largest ever held in the States.

The building selected for the exhibition is the Amusement Hall, Broad street, near Spruce, on the line of electric cars, connecting with all parts of the city and suburbs. It is also directly on the line of the Overland (dummy) Railway, running to the new reservoir, past a number of the forts and battle-fields of the civil war, through a charming country to the beautiful Glendale Park. The hall will be at the service of exhibitors from May 14th to 27th, thus giving ample time for arranging and getting ready to leave. The exposition should be opened Monday, May 19th, and continue the entire week. If there should be any surplus over expenses from the exposition, it will be contributed to the Rush monument fund of the American Medical Association.

The following classes of applications will be entertained:

1. Medical books and stationery, charts and diagrams, busts, portraits, engravings, photographs, etc.
2. Hospital and ambulance plans and models.
3. Surgical instruments and supplies, general and special (gynecic, obstetric, orthopædic, laryngeal, optic, ophthalmic, dental, etc.).
4. Microscopes, analysis outfits and electro-galvanic apparatus.

5. Pharmaceutical products.
6. Rubber goods applicable to medicine and surgery.
7. Invalid furniture.
8. Invalid foods.
9. Sanitary appliances, as ventilators, filters, w. c. basins, traps, and similar necessities, and disinfectants.

Applicants for space should state the character of their proposed exhibits, that they may be assigned to their respective groups. The subcommittee reserve the right of rejection in case of apparent reason.

J. BERRIEN LINDSLEY,
Chairman Sub-Com. on Exhibits.

Nashville, Tenn., February 6, 1890.

MISCELLANY.

THE Municipal Council of Paris has ordered that the sum of 40,000 francs be placed at the disposal of the 20 Mayors for the relief of families afflicted by the epidemic of influenza.

HEALTH IN MICHIGAN.—For the month of January, 1890, compared with the preceding month, the reports indicate that influenza, pneumonia, pleuritis and membranous croup increased, and that typho-malarial fever, inflammation of brain, cholera morbus, typhoid fever (enteric), dysentery, inflammation of kidney, inflammation of bowels, whooping-cough, diphtheria and small-pox decreased in prevalence.

Compared with the preceding month the temperature was lower, the absolute humidity was less, the relative humidity and the day and night ozone were more.

Compared with the average for the month of January in the four years 1886–1889, influenza, pneumonia and measles were more prevalent, and typho-malarial fever, cholera morbus, cholera infantum, dysentery, inflammation of brain, membranous croup, typhoid fever, scarlet fever, cerebro-spinal meningitis, diphtheria and remittent fever were less prevalent in January 1890.

For the month of January, 1890, compared with the average of corresponding months in the four years 1886–1889, the temperature was much higher, the absolute humidity was more, the relative humidity was less, and the day and night ozone were more.

Including reports by regular observers and others, diphtheria was reported present in Michigan, in the month of January, 1890, at 61 places, scarlet fever at 62 places, typhoid fever at 48 places, and measles at 27 places.

Reports from all sources show diphtheria reported at 4 places more, scarlet fever at 2 places less, typhoid fever at 9 places less, and measles at 5 places more in the month of January, 1890, than in the preceding month.

The Secretary of the State Board of Health says: "La grippe" is reported by a few of their observers, and, apparently, some call certain types of cases of the prevailing epidemic "intermittent fever;" but, even though its causation and symptoms are somewhat like those of intermittent fever, "influenza" is undoubtedly the best name for the disease, and it is so reported on 98 per cent. of all the weekly reports by Michigan physicians received at the office of the State Board of Health for the week ending February 1; the most sickness being caused by influenza, pneumonia, bronchitis and rheumatism.

LETTERS RECEIVED.

Dr. C. R. Early, Ridgway, Pa.; Dr. Henry B. Baker, Lansing, Mich.; Dr. William Porter, St. Louis, Mo.; Dr. Frank H. Potter, Buffalo, N. Y.; Dr. H. C. Hemenway, Kalamazoo, Mich.; E. Merck, New York; J. Movius & Son, Boston, Mass.; Dr. Fred. Humbert, Alton, Ill ; Dr. L. Swift, Ft. Barrington, Mass.; I. Haldenstein, Thos. Leeming & Co., New York; The North American Practitioner, Chicago, Ill.; Parke, Davis & Co., Detroit, Mich.; The Upjohn Pill and Granule Co., Kalamazoo, Mich.; King's Medical Advertising Agency, New York; T. W. Hannaford, London, Eng.; Dr. J. T. McShane, Carmel, Ind.; Johnson & Johnson, New York; The Cibils Fluid Extract of Beef Co., Boston, Mass.; Gustave E. Stechert, New York; Battle & Co., St. Louis, Mo.; Dr. J. F. Force, Minneapolis, Minn.; F. C. Lewis, Catskill, N. Y.; The New Table Co., St. Louis, Mich.; S. H. Parvins' Sons, Cincinnati, O.; F. Crosby Co., New York; Dr. C. S. Pixley, Elkhart, Ind.; Dr. I. S. Stone, Lincoln, Neb.; Gladstone Lamp Co., New York; Dr. John H. Clark, Mechanicsburg, O.; Dr. C. H. Wilcox, Berwick, Ill.; Dr. Kilpatrick, South Omaha, Neb.; Sharp & Smith, Chicago, Ill.; Dr. Wm. B. Davis, Cincinnati, O.; Dr. T. H. Nott, Goliad, Texas; Dr. M. T. Brockney, Indianapolis, Ind.; Dr. Wm. H. Danforth, Worcester, Mass.; Dr. L. L. McArthur, Chicago; Oneita Spring Co., Utica, N. Y.; The Drevet Mfg. Co., New York; Dr. E. Ingals, Chicago; Dr. Madison Reece, Abingdon, Ill.; Dr. W. R. Tipton, New York; Dr. H. J. Cowan, Danville, Ky.; A. B. Powl, Keene, N. H.; E. Steiger & Co., New York; Dr. Geo. W. Stoner, Detroit, Mich.; Typothetæ, Chicago; Dr. W. D. Mann, Buffalo, N. Y.; Dr. N. G. Dill, Desota, Ind.; Dr. O. L. Williams, Oak Cliff, Tex.; Dr. W. T. Corlett, Cleveland, O.; Ward Bros., Jacksonville, Ill.; Provident Chemical Works, St. Louis, Mo.; R. W. Gardner, New York; Dr. G. Cowan, Danville, Ky.; Dr. John H. Gilman, Lowell, Mass.; Dr. W. L. Schenk, Osage City, Kan.; Dr. A. L. Carroll, New York; Dr. Leartus Connor, Detroit, Mich.; Dr. John Shrady, New York; J. Walter Thompson, New York; Dr. Wm. W. Pearce, Waukegan, Ill.; Dr. J. W. C. Smith, Benton, Miss.; Dr. J. H. Goss, Athens, Ga.; Dr. J. A. Freeman, Millington, Ill.; Dr. W. E. Burtless, Hickory, N. C.; Dr. R. S. Brice, Keota, Ia.; M. Kreedy, Fredonia, Ill.; J. Astier, Paris, France; Dr. H. H. Thorpe, Liberty Hill, Tex.; College of Physicians and Surgeons, Baltimore, Md.; Dr. Thos. S. K. Morton, Philadelphia; Dr. D. W. Prentiss, Washington; Armour & Co., Chicago; M. Gratz, Munich, Bavaria; Gustave Fischer, Jena, Germany; L. Bruck, Sydney, N. S. W.; Dr. W. Franklin Coleman, Chicago; T. W. Hannaford, London, Eng.; Dr. S. Solis-Cohen, Philadelphia; W. H. Scheiffelin & Co., New York; Dr. John N. Mackenzie, Baltimore, Md.; Horlick's Food Co., Racine, Wis.; Dr. A. R. Cain, Senecaville, O.; G. Masson, Paris, France; Galvano-Faradic Manufacturing Co., New York; Dr. M. R. Fosgate, Auburn, N. Y.; The Boston Mailing Co., Boston; B. Westermann & Co., New York; Dr. Henry Sherry, Chicago; Dr. V. P. Gibney, New York; Dr. R. J. Hart, Charter Oak, Ia.; C. M. Caswell & Co., Boston; Dr. M. W. Rozzell, Pryorsburg, Ky.; Dr. W. E. Ward, Laingsburg, Mich.; Dr. L. L. McArthur, Chicago; The Plimpton Mfg. Co., Hartford, Conn.; Dr. James P. Marsh, Troy, N. Y.; Doliber, Goodale & Co., Boston; Dr. John D. S. Davis, Birmingham, Ala.; Dr. John M. Dodson, Chicago; Wm. R. Warner & Co., New York; Col. J. H. Baxter, Washington; Dr. Joseph Martin, Jefferson Barracks, Mo.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending February 8, 1890.

Surgeon W. H. Jones, ordered to the U. S. S. "Swatara."
Medical Director A. Hudson, died February 7 at Mare Island Hospital, Cal.

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ORIGINAL ARTICLES.

INJURIES OF THE BLADDER DURING LAPAROTOMY, INCLUDING A REPORT OF SIXTY-SEVEN CASES.

Read in the Section of Obstetrics and Diseases of Women at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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Case 1.—On December 5th, 1888, I performed laparotomy for what was supposed to be a pelvic abscess in a woman 25 years old who had been married three years and had never borne children. The history comprised pelvic pain of long standing and varying degree, with occasional discharges of pus through the rectum—the latter feature being of doubtful accuracy. Two distinct swellings were detectible, one on either side of the uterus, the one on the left being the greater, and about the size of a billiard ball. The uterus and adjacent structures were quite immovable.

On completing the abdominal incision, the omentum was found to be attached to the anterior abdominal wall, and when the adhesions were partially separated it was discovered, further, that both the omentum and abdominal wall were adherent to the bladder. The adhesions were not especially firm, and were readily separated by means of the fingers and the handle of a scalpel. Through the opening thus made there appeared a thick wall of tissue, pinkish red in color, which roofed over the entire contents of the true pelvis, and the uterus, ovaries, and tubes could be neither seen nor directly felt. I pressed the finger-points in every part and in various directions in the endeavor to find a spot of such character as to indicate the presence of underlying fluid, but without success. Under bimanual exploration I could feel with greater distinctness than before the hard masses on either side of the pelvis, but their nature was uncertain and their removal impracticable; therefore, I reluctantly closed the wound, and dressed it in the ordinary way.

On the following day the dressings were found to be saturated with urine containing some blood, and only a small amount had been withdrawn by the catheter. This too was bloody. Evidently the bladder had been ruptured during the separation of the adhesions to its walls. The fistulous opening was between two of the upper stitches, and not more than three inches below the umbilicus.

A sigmoid catheter was placed in the bladder. Through this bloody urine escaped for four days. A lesser amount also came through the fistula. The presence of the catheter caused so much irritability that I removed it, and subsequently an ordinary soft catheter was introduced every two hours. During the succeeding twenty-four hours a full amount of urine appeared to be withdrawn and none came through the abdominal wound, but on the evening of the sixth day it again flowed from the fistula, and the permanent catheter was replaced. The quantity of blood had gradually lessened, and at the end of the seventh day disappeared entirely. Urine continued to escape through the fistula in steadily diminishing amount until the 28th of December—twenty-three days after the operation—when it ceased and the opening was permanently closed.

The foregoing experience taught me how easily such an accident may occur, and in view of the frequency with which laparotomies have been performed—amounting to many thousands—I thought it highly probable that it had occurred oftener than the few published cases would seem to indicate. For the purpose of testing the matter I addressed inquiries to more than seventy prominent abdominal surgeons, at home and abroad, and although more than one half of those to whom I applied failed to respond, I succeeded in obtaining the details of many hitherto unpublished cases.

Cases 2 to 10.[1]—In 1880, Gustave Eustache published an account of ten cases of bladder injury, one of which occurred in his own practice, with recovery of the patient. Of the others, Tauffer had one and the patient recovered; Péan one, the patient also recovering; Henry Smith one, the patient dying; Spencer Wells two, with one death and one recovery; Thornton three, one of whom died, and the other two recovered; Bantock one, with recovery.

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[1] Journal des Sciences Médicales de Lille, 1880.

Case 11.—Dr. Gustave Eustache,[2] Lille, France. Operation May 14th, 1878. There were extensive adhesions, and the bladder was carried upward. At a point nearly as high as the umbilicus it was incised for nearly three-fourths of an inch, permitting the escape of urine into the abdominal cavity. The bladder was sutured with catgut, the abdominal cavity cleansed and the wound closed. The patient wholly recovered.

Case 12.—Dr. T. G. Thomas reported an interesting case to the American Gynecological Society[3] in 1881, in which during a laparotomy undertaken for the removal of an ovarian cyst he found the bladder expanded over the front aspect of the tumor "upward to a point midway between the umbilicus and ensiform cartilage, and laterally well down into the lumbar regions." The extent of tumor surface thus covered by the displaced bladder was so great as to preclude the use of the trocar for the purpose of evacuating the cystic contents, and the adhesions between the viscus and the tumor were so firm, and their limits so vaguely defined, that it seemed as though the effort to remove the tumor would have to be abandoned. However, as the result [illegible] appy thought, the operator cut through [illegible] ior wall of the bladder, so that one or [illegible] could be inserted. In this manner [illegible] of the viscus was ascertained, the ad- [illegible] were cut away from the tumor side, and [illegible] on the attachments were entirely severed. The tumor was then removed in the ordinary manner.

There remained however the embarrassing presence of an immensely hypertrophied bladder with an incision through its wall. The operator met this difficulty by using the abdominal walls as a pair of clamps to bring the vesical walls securely together externally, so that if leakage should occur it would not take place in the peritoneum. The abdominal wound was closed from above downward with silver sutures. Whe [illegible] wound in the bladder was reached the n [illegible] which had an eye near its extremity, was [illegible] "through the abdominal wall, then throu

dominal tumor. An exploratory incision was made in the middle line from above the umbilicus to one inch above the symphysis pubis. The tumor appeared to be covered with altered serous membrane. Adhesions were found to be so universal that no attempt was made to remove the tumor and the abdominal wound was closed. The next day urine was discovered discharging through the wound, and a long male catheter passed upwards from the urethra appeared at the abdominal incision as high as the umbilicus. It was found that an incision an inch and a half long had been made in the bladder. This was closed by fine wire sutures twenty-six days after the operation, the abdominal wound being reopened for several inches for the purpose. Eleven days afterwards all the urine was passed by the urethra, except on one or two occasions when, in consequence of over-distension the bladder gave way in one spot, which gradually healed. The patient died six months after the operation.

Case 14.—Reported by Dr. Bergman.[4] The operation was undertaken for the removal of a polycystic tumor which could not be extirpated because of adhesions. In cutting through the peritoneum the bladder, which was lying toward the left side of the uterus and between two hemispheres of the cyst was opened. The wound in the viscus was closed with silk sutures, cut short, and then the abdominal incision was closed. Death occurred in thirteen hours.

Case 15.—Dr. B. Stilling.[5] Upon making an incision the operator found no peritoneal cavity, the peritoneum having become everywhere incorporated with the tumor, or the abdominal viscera. The bladder was elongated and pushed over to the left side. It appeared like a cyst between the intestines, and was punctured by the trocar. The tumor, which was subsequently found to be a dermoid cyst of the ovary, could only be partially [illegible] ved. The wound in the bladder was closed

Case 17.—Dr. Leroy McLean.[6] Before proceeding to the operation a large aspirating needle was introduced to the left of the median line and a quantity of fluid having the consistency and color of molasses withdrawn. The bladder was then evacuated. The incision extended from an inch below the umbilicus downward two and one half inches. At its lower angle, at a depth of three quarters of an inch, the operator cut into what appeared to be a cyst in the abdominal wall which contained about two drachms of pale fluid. The incision was extended upward and downward, and a multilocular tumor having two strong omental adhesions was removed. It was then discovered that the bladder, which was strongly adherent to the abdominal wall, had been cut through on both its anterior and posterior surfaces. The incisions were closed with interrupted silk sutures, and the abdominal wound with silver wire. The patient was placed in bed, and at the end of an hour two ounces of urine was removed by means of a catheter, which was permitted subsequently to remain in the bladder. The patient rallied and at the end of ten hours her condition seemed favorable. A few hours later, however, she began to sink, and death occurred thirty hours after the operation. Post-mortem examination showed good primary union of the incision in the bladder, no escape of urine into the abdominal cavity, and no peritonitis.

Case 18.—Dr. E. Noeggerath.[7] When the incision was made through the abdominal walls a dense layer of cellular tissue was encountered, but no peritoneum. A trocar was introduced and about a pailful of colloid material with a large amount of fat was withdrawn. The tumor was strongly and extensively adherent to the abdominal walls. The operator cut into a cystic cavity the apex of which reached upwards to within 2½ inches of the umbilicus. Upon examination this was found to be the bladder, which had been carried upwards, and become so attached to the anterior wall of the abdomen as to appear like a portion of the cyst itself. The opening was sewed up with catgut, and the bladder kept empty with a catheter. It was impossible to remove the tumor, owing to the intimate adhesions which existed between the cyst wall and the peritoneum, and which caused them to seem like a single structure. The patient died in twenty-six hours, apparently from acute anæmia caused by hæmorrhage from a soft mass about half as large as a kidney, which occupied one of the pouches of the tumor, and which was accidentally injured. The autopsy showed that there was no peritonitis.

Case 19.—Dr. William Goodell.[8] The operation was for the removal of a large rapidly growing fibroid of the uterus which was found to be extensively adherent. In endeavoring to separate the adhesions the operator made an opening into what was apparently a cyst, but which was soon recognized as the bladder. The organ was an inch or more in thickness, spread over the tumor with which it was incorporated, and reaching as high as the navel. It was separated from the tumor downward to a point sufficiently low to permit the application of a ligature to the tumor, which was then removed. The wound in the bladder was closed with catgut sutures, and the one in the abdominal wall in the ordinary way. The patient died from shock a few hours after the operation.

Cases 20 and 21.—Dr. William Goodell.[9] These cases happened in very difficult ovariotomies, complicated with intraligamentary cysts In both cases the rent was closed by continuous catgut sutures, and both recovered.

Case 22.—Dr. Gilman Kimball,[10] Lowell, Mass. Operation for the removal of an immense fibroid of the uterus. A ligature could not be applied about the pedicle, and an attempt was made to cut the tumor away piecemeal. About one-half of the tumor was thus removed, during which procedure the bladder was cut into. The patient died.

Case 23.—Dr. Gilman Kimball.[11] The operation was made for what was thought to be an ovarian cyst. When the tumor was reached it was found to be a fibrocyst of the uterus. The stump was transfixed, ligated and dropped. At the end of three or four weeks urine began to escape from the lower angle of the wound. The flow increased, rather than diminished, and the patient died of exhaustion at the end of seven weeks.

Case 24.—Dr. Gilman Kimball.[12] Case of supposed ovarian tumor, but which proved to be a fibrocyst of the uterus. A catheter was used in order to guide as to the position of the bladder. A ligature was applied, apparently safely, above the bladder. In less than a week urine appeared through the lower part of the incision. At the end of four weeks the patient died of abscess of the parotid gland.

Case 25—(Reported by Dr. Gilman Kimball).[13] The case occurred in the practice of a physician in Providence, R. I., in 1876. The tumor was a fibroid of the uterus, complicated by adhesions in every direction. Two holes were cut into the bladder, both of which were closed with silver sutures. At the end of two or three months the sutures began to discharge from the urethra, rectum, and the line of the incision The patient finally made a perfect recovery.

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[6] Medical Record, February 8th, 1879.

[7] Trans. New York Obstetrical Society, 1880.

[8] Trans. American Gyn. Soc., 1881, p. 274.

[9] Private Letter.

[10] Trans. American Gyn. Soc., 1881, p. 271.

[11] Loc. cit.

[12] Loc. cit.

[13] Loc. cit.

Cases 26 and 27.—Dr. Thomas Addis Emmet, New York. Dr. Emmet states that he has twice cut into the bladder during laparotomy. In both cases the wound was closed with fine silk sutures, and there was no trouble afterwards.

Case 28.—Dr. Geo. W. Porter, Providence, R. I. Operation performed December 16, 1887, for removal of a fibroid in the anterior wall of the uterus. On cutting through the abdominal wall the first cavity entered was the bladder, which had been carried up to within 1½ inch of the umbilicus, a fact of which the operator was not aware before the operation. The bladder was firmly adherent to the anterior abdominal wall, so that after opening the organ it was difficult to discover the limits of the adhesions between the visceral and parietal peritoneum. No urine entered the abdominal cavity. Before going further the operator brought together the walls of the bladder, which were greatly hypertrophied, the muscular layer with a continuous catgut suture, and the serous coat with the Lembert suture. After the bladder wound was closed the abdominal incision was extended upward, but it was found that the appendages could not be removed, as had been intended, and the wound was closed. A soft rubber catheter was left in the bladder for several days. Cystitis followed, but it ceased in about three weeks, and the patient had no further trouble.

Case 29.—Dr. E. C. Dudley, Chicago. In October, 1886, during a laparotomy for colloid ovarian tumor which drew the bladder up nearly to the umbilicus, the viscus was wounded, its walls being incorporated with the tumor. The bladder wound was closed with buried catgut sutures, and the remainder of the wound with deep silver sutures. A further exploratory operation near the umbilicus demonstrated the malignant and irremovable nature of the growth. A sinus remained at the site of the bladder wound through which urine was discharged upon the surface of the abdomen until her death, which occurred seven months later after the removal of the greater portion of the tumor by another surgeon.

To the report of this case Dr. D. adds: "It is my custom to pass a sound into the bladder before opening the abdomen. In this case, however, the pressure of the tumor upon the pubes prevented the sound from passing as high as it might have been passed had I suspected the bladder displacement. I would suggest as the danger signal which should deter one from opening the bladder, the vascular condition of its walls; which always causes bleeding from the numerous small vessels to an extent rarely observed in simply going through the abdominal wall."

Case 30.—Dr. A. J. C. Skene, Brooklyn, N. Y.[14] The operation was one of combined ovariotomy and hysterectomy. The bladder was adherent to the cyst wall, and was dissected away far enough to permit the application of a clamp below the uterus and the most dependent part of the cyst. The uterus and cyst were then removed. After the operation the catheter was used two days, and after that the patient urinated without trouble and passed the usual quantity of water. On the tenth day urine was discovered escaping by the side of the clamp. The catheter was then used at regular intervals, and the patient was not permitted to make any voluntary efforts. The clamp was removed on the fifteenth day. It was then found that the bladder was open on the right side at the site of an adhesion which was the result of a cellulitis and abscess that years before had discharged through the bladder. A year after the operation the patient was perfectly well.

Case 31.—Dr. A. J. C. Skene. The case occurred in a hospital patient, in which an operation was made for pyosalpinx with many adhesions. The bladder, which was covered with adhesions, was opened. The patient recovered, but has a vesico-abdominal fistula which has never healed.

Case 32.—Dr. W. W. Potter, Spokane Falls, W. T. The operation was done in 1876, for the removal of a fibrocystic uterus weighing over 6 lbs. The tumor was firmly pressed into the pelvis, and adherent to all of the surrounding structures. In separating the bladder from the tumor the wall of the viscus was torn to the extent of 1½ inch. The rectal wall was also perforated in two places. The openings were all closed with silver wire. The bladder wound healed completely, and the sutures came away through the urethra some weeks later. The rectal wounds also healed, one of the sutures escaping through the anus, and the other through the abdominal wound. The patient recovered, and is still alive and well.

Case 33.—Dr. A. Martin, Berlin. Tumor of the ovary with extensive adhesions. The mischief was discovered at once, and the wound closed by silk sutures. The patient recovered without a single bladder symptom.

Case 34.—Dr. A. Martin. A myomotomy with pyosalpinx. In this case the bladder healed at once without any disorder, the patient having free micturition from the moment of the operation. She died from infection by the pyosalpinx.

Case 35.—Dr. A. Martin. Operation for malignant papilloma of the bladder. This was removed and the bladder closed. The patient had free spontaneous micturition subsequently until she died of general carcinosis.

Case 36.—Dr. Paul F. Mundé, New York. Hysterectomy for myoma. The bladder was drawn high up on the tumor, and was injured during the application of the elastic ligature. The bladder wound was sewed together. The patient died of suppression of urine forty-eight hours after the operation.

Case 37.—Dr. James B. Hunter, New York.

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[14] Diseases of Women, p. 534.

Operation performed October 22, 1888, for removal of a cystic tumor. The bladder was firmly adherent to the abdominal wall, and was cut directly into at a point in the median line about halfway between the pubes and the umbilicus. There had been a previous operation for diseased ovary by another operator. The wound was closed with catgut. The operation was then continued and a small cyst removed. A catheter was kept in the bladder for a few days. The patient had no trouble whatever from the wound in the bladder.

Case 38.—Dr. Chas. T. Parkes, Chicago. In making the primary incision through the abdominal wall for the purpose of uncovering an undetermined tumor, a cut was made in the bladder about 2 inches long. This was closed immediately by means of the Lembert intestinal suture and gave no more trouble. The urine was taken through the catheter every six hours for a week.

Case 39.—Dr. Chas. T. Parkes. Operation for pelvic abscess. After laparotomy the abscess was aspirated, and then an opening torn into it by expanding the jaws of a forceps. It was not known that any damage was done to the bladder until the urine was taken by catheter some hours after the operation. The fluid withdrawn was mainly blood. The presence of blood in the urine persisted for four or five days, but no other complication arose. The inference made was that the bladder wall had been injured by the forceps.

Case 40.—Dr. Joseph Eastman, Indianapolis, Ind. The operation was done July 4, 1888, for removal of a large ovarian cyst. Extensive adhesions bound the tumor to the abdominal walls and bladder. The latter was opened by the scissors at the lower angle of the first exploratory incision. The opening was subsequently made larger in order to secure more perfect surgical adjustment of the parts, and was 3 inches in length when ready to be closed. Closure was effected by means of two rows of catgut suture. A glass drainage tube was kept in the abdominal cavity for two weeks and a Skene's catheter was kept in the urethra for the same length of time. The patient recovered and suffered no evil effects from the bladder injury.

Case 41.—Dr. Joseph Price, Philadelphia. Operation for removal of an ectopic pregnancy two weeks after rupture of the tube. The tissues were all structurally changed, and friable. The bladder was opened, and the patient died at the time of operation.

Case 42.—Dr. A. C. Bernays, St. Louis, Mo. Operation for removal of a solid fibroid tumor of the uterus weighing 15 lbs. A small puncture was made in the bladder. The edges of the puncture were caught in a Tait's hæmostatic forceps, and secured by a ligature. No evil resulted. The patient died of septicæmia on the eleventh day. At the autopsy the perforations could not be found on examining the interior of the bladder.

Case 43.—Dr. M. D. Mann, Buffalo, N. Y. A supra-vaginal hysterectomy for multiple uterine fibroids. A wire clamp was applied closely to the utero-vaginal junction, and the uterus amputated above. It was then found that a small section of the bladder had also been cut away. When the slough separated urine came from the vagina, and also through the abdominal wound. The os uteri was closed, and later the abdominal fistula also. At first, the bladder held urine only about one hour, but by and by the organ seemed to dilate, and the patient could sleep all night without rising.

Case 44.—Dr. William P. Chunn, Baltimore, Md. Operation done in March, 1888. Operation for removal of an impacted fibroid uterus. The bladder was found adherent as high up as the umbilicus, and was cut open. The bladder incision was enlarged and the whole hand introduced into the organ, when the mistake was discovered. The tumor was irremovable. The bladder was stitched into the abdominal wound in such manner as to bring the cut edges of the viscus and of the abdominal wall respectively in apposition by means of a single row of sutures which were inserted further from the edges of the wound than usual, the object being to cause a wide strip of bladder peritoneum to adhere to a correspondingly wide strip of parietal peritoneum, and thus shut off the bladder wound from the abdominal cavity. A slight fistula remained for a short time, but finally healed, and the patient fully recovered, and became able to urinate naturally.

Case 45.—Dr. T. G. Thomas[15] mentions a case in which, eight days after ovariotomy, about one pint of urine began to pass daily through the abdominal opening, the lower angle of which had been kept open for the purpose of washing out the peritoneum. The patient recovered and the fistula healed of itself.

Case 46.—Dr. Charles Carroll Lee, New York, case of uterine sarcoma. The wall of the bladder, which was very attenuated, was drawn up on the face of the tumor, and was unrecognized and inadvertently cut into. The bladder wound was closed with a lock-stitch of medium-sized catgut, which barely included the edge of the mucous membrane. A Sims' catheter was kept in the bladder during the first three or four days. Complete union was obtained, with no subsequent cystitis.

Case 47.—Dr. Charles Carroll Lee, an ovarian cyst with thick walls, around which there had been much inflammation, became attached to the bladder. In attempting to dissect off the bladder it was opened. The treatment pursued was the same as in the foregoing case, and the result equally satisfactory.

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[15] Diseases of Women, p. 264.

Case 48.—Dr. Howard A. Kelly, Philadelphia, Pa., operation done September, 1887, for interstitial salpingitis with pyosalpinx; enucleation very difficult. About two days after the operation stillicidium of urine and fæcal flow began following the track of the drainage tube. For many weeks urine and bubbling gases escaped intermittently, when both ceased entirely and the patient made a complete though tedious recovery.

Case 49.—Dr. Howard A. Kelly, operation of hystero-myomectomy for fibroma, performed November 30, 1887. The uterus, with tumor, delivered through abdominal incision. The bladder was catheterized during the operation in order to determine its position which was elevated on the anterior face of the tumor. It was dissected off with care and the tumor embraced at its base in Kœberle's serre-nœud and cut away, leaving the pedicle treated extraperitoneally with clamp. Within a few days urine escaped from the lower angle of the incision. The opening contracted down to a small fistula which spontaneously closed after a few weeks. The recovery was complete and in no way retarded by the bladder injury.

Case 50.—Dr. Howard A. Kelly, operation June 2, 1888, for removal of several pints of stinking pus in the peritoneum, due primarily to tubal disease. An incision two inches above the symphysis pubis passed through the agglutinated peritoneal coats, half an inch thick, and entered the bladder. There was at once a slight flow of clear water. Beneath this the pus sac was opened, emptied and drained. The bladder injury was not recognized at the time of its occurrence. The patient had a constant flow of urine from the wound until she died, three and a half months later, of meningitis.

Case 51.—Dr. Howard A. Kelly, operation made November 28, 1888, for removal of a large unilocular ovarian cyst weighing about 50 lbs., which had grown in nine weeks. The cyst was densely adherent to the pelvis and was removed with the whole of the omentum up to the transverse colon. During the convalescence the abdomen remained scaphoid, and at no time was there any disturbance whatever due to peritoneal inflammation. The patient was catheterized but once after the operation, and then with great care as to cleanliness of catheter and mouth of urethra. The temperature was normal up to the seventh day, when it went up to 100°. On the following day there passed, with much pain, a slough which appeared to be the mucous membrane of the bladder, two inches long. After this the patient suffered much with vesical pain and passed blood and pus in the urine for two weeks, at which time she had recovered from the bladder trouble, but was taken with fever and delirium, which developed into mania, for which she had to be confined in an insane asylum, where she now is.

Case 52.—Dr. John Homans, Boston, Mass.,[16] operation October 5, 1881. In the removal of a non-adherent dermoid tumor, weighing 22 lbs., the bladder was accidentally incised. A piece the size of a thumb nail was cut off from the elongated fundus, and the viscus split through both its anterior and posterior wall for about two inches. The bladder contained no urine. The organ was considered anomalous, as it had not contracted behind the pubis when emptied. The detached piece was removed. The wounds in the bladder were closed with continuous silk suture, care being taken to not include the mucous membrane in the stitch. A catheter was kept in the urethra. The patient recovered and had no subsequent trouble.

Case 53.—Dr. John Homans, operation for double papillomatous ovaries in a patient who had been tapped eighteen times in five years for removal of ascitic fluid. The bladder was opened and the wound closed with twelve interrupted silk sutures. A catheter was kept in the bladder seven days. In this and the foregoing case the sutures were left shut up in the abdominal cavity. Result, recovery.

Case 54.—Dr. John Homans, on January 22, 1887, hysterectomy for uterine fibroid. A portion of the bladder wall an inch in diameter was included in the serre-nœud. Urine came from the wound for four weeks. A catheter was kept in the bladder.

Case 55.—Dr. G. G. Juliard;[17] *during an ovariotomy there occurred a transverse rupture of the bladder 12 centimetres long, in the posterior wall.* It was closed with catgut sutures applied after Lembert's method, avoiding the mucous lining. A permanent catheter was employed six days. The cure was complete at the end of three weeks.

Case 56.—Dr. Walter F. Atlee, Philadelphia,[18] operation for removal of cystic tumor of the ovary, which had been tapped four times. The opening of the abdomen revealed a deep red soft tissue, instead of the whitish-blue ovarian cyst. It was the bladder, which was adherent to the cyst wall and dragged up almost to the navel. In effecting the separation of the adhesions the viscus was torn so that the little finger could be passed into the opening, and large gushes of urine were seen to take place into the cavity of the abdomen, although a catheter was used immediately before the operation by an experienced nurse, who said that the bladder was empty, and that she could push the instrument far into the viscus. The bladder wound was closed with a plaited silk thread, which was introduced by means of two needles and brought together in such a manner as to fold inward the edges and bring the peritoneal surfaces into apposition.

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[16] Boston Medical and Surgical Journal, February 16, 1882; also Medical Record, January 15, 1887.

[17] Archives de Tocologie, September, 1883, p. 567.

[18] American Journal Medical Sciences, Vol. lxxxv, 1883, p. 119

The abdomen was then cleansed and the wound stitched and dressed in the usual mode. A self-retaining catheter was left in the bladder two days. There was no further trouble, and the patient made a satisfactory recovery.

Case 57.—Dr. S. C. Gordon, Portland, Me. A laparotomy was made for the removal of an ovarian tumor to which the bladder was attached, and by which it was drawn up. In separating the adhesions the bladder was torn at least three inches. The rent was closed with catgut, the serous edges being turned in. The urine was subsequently withdrawn regularly and no trouble resulted.

Case 58.—Reported by Dr. S. C. Gordon, who says: "This case occurred in the practice of a colleague of mine. The bladder was torn extensively, so that he stitched the sides into the abdominal wound and drained by tube until he could remove the tube, and the fistula finally closed."

Case 59.—Dr. Joseph Taber Johnson, Washington, D. C. During a laparotomy a cut was made straight into the bladder. The wound was stitched up at once and no trouble followed.

Case 60.—Dr. E. W. Cushing, Boston, Mass.,[19] operation done October, 1888, for pyosalpinx and pelvic abscess, attended by intestinal and omental adhesions. The day after the operation urine appeared in the drainage tube, and the urine drawn by the catheter was bloody. No motion of the bowels could be obtained for a week, and then the bowel appeared to have been rent, or to have sloughed, for fæcal matter and gas soon afterwards escaped through the drainage tube. After doing very well for a fortnight after the operation obstinate constipation occurred, followed by violent diarrhœa. The urine then appeared to find its way backward into the bowel. Patient died twenty-three days after the operation.

Case 61.—Mr. Lawson Tait,[20] operation for ovariotomy and hysterectomy at St. Peter's Hospital, Albany, N. Y., September 10, 1884. The uterine pedicle was secured by clamp; a portion of the bladder wall was included with the pedicle, and a vesical fistula resulted. The operator stated to the class before whom the operation was done that it would not make any difference to the patient's recovery, and it did not. The fistula had perfectly healed by November 30, and March 1, 1889, the patient was in excellent health.

Case 62.—Mr. Lawson Tait, ovariotomy with extensive adhesions in a woman aged 55 years; operation performed in June, 1888. A large hole was torn in the bladder, which was stitched up with a continuous suture, and after months of closing the stitch gave trouble; a urinary fistula formed. The patient, who was residing in Italy, appealed to Mr. Tait for assistance. He advised the surgeons to wait no longer, but to open the sinus and remove the stitch. Instead, they allowed the patient to go on suffering until the stitch came away of its own accord, which it did in April last.

Case 63.—Mr. Lawson Tait, operation on April 13, 1889, for a congenital cyst. The bladder was opened by mistake for the peritoneal cavity. The opening was stitched and it healed in the usual fashion, and the patient recovered without any trouble.

In a letter detailing the foregoing cases Mr. Tait says: "I have repeatedly included a portion of the base of the bladder in the wire of the clamp and have never had any trouble with it at all, except that the fistula remains open for a few weeks, but it has always healed. My impression all through has been that a great deal too much is made of lesions of the bladder in operations of the abdomen and pelvis."

Case 64.—Dr. Washington L. Atlee, Philadelphia, Pa. Dr. Robert Battey, in a letter informing me that the accident had never occurred to himself, says: "I have vividly impressed upon my recollection the graphic account given by the late W. L. Atlee, before the Obstetric Section of the American Medical Association, of how, in a complicated ovariotomy, he tore the adherent bladder literally into shreds. I know not whether these statements of Dr. Atlee were ever put into print, but the courage and honesty with which he made the public statement of the case for the benefit of his colleagues elicited both admiration and applause."

Case 65.—Billroth, Vienna,[21] operation for the removal of a large fibro-cystic tumor with the fundus of the uterus. In separating the bladder it was opened. Patient recovered in three weeks.

Case 66.—Billroth.[22] In removing a cancerous left ovary the intestine and bladder were found infiltrated, necessitating enterotomy and cystotomy. Result unknown.

Case 67.—Hartig, operation March 6, 1885, for removal of a non-hæmorrhagic intramural fibromyoma the size of a pregnant uterus at full term. An intended enucleation of the tumor was found to be impossible, by reason of the tumor being located too deeply in the pelvis. The uterus was amputated supra-vaginally by Schroeder's method. In cutting the knot of the rubber ligature a vein was injured, causing profuse bleeding. When the vessel was ligated it was noticed that a portion of the fundus of the bladder, about three-quarters of an inch in length, had been included in the constrictor, and was so thinned by the compression as to need repair. In doing this the bladder was pierced by a needle and a few drops of urine escaped. Repair was made by running catgut suture in two stages. The patient died suddenly on the fourth day from secondary hæmorrhage, which, as the autopsy showed, came from the wounded vein, from which the ligature had become loosened. The closure of the bladder wound was found perfect.

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[19] Annals of Gynecology, March, 1889, p. 272.

[20] Albany Medical Annals, Vol. vi, p. 1.

[21] R. S. Sutton, letter from Vienna. Pittsburg Medical Journal, January, 1882

[22] Sutton, Vienna letter. Obstetric Gazette, December, 1881.

The foregoing list is by no means complete, but the number of cases it includes—sixty-seven cases among forty-one operators—is sufficiently large to show that the accident is by no means infrequent.

Some surgeons manifest a reluctance to making known the various mishaps which occur in their operative work, in the belief, perhaps, that a knowledge of them will injuriously affect their reputation with their colleagues. I consider this an error of judgment. Surgeons should be honest as well as skilful, and their integrity is quite as likely to receive recognition as their dexterity, and certainly is of more value.

Considering the conditions under which bladder injuries may happen during laparotomy, it is not discreditable to any surgeon to meet with them, for they may not be due to any carelessness or lack of skill on his part. In many of the foregoing cases no possible degree of diligence could have averted the accident. Adhesions of the peritoneal surface of the elongated bladder to that of the anterior abdominal wall frequently cannot be known in advance, and their existence is only demonstrable after the viscus has been opened. The use of the catheter as a diagnostic means is not always available, because the compression of the bladder against the pubis may prevent the introduction of the instrument beyond that point. Certainly, however, this should always be attempted in any case of suspected difficulty, and would seem to be even a proper and unobjectionable routine method.

Another useful precaution is to avoid prolonging the abdominal incision far down towards the pubic bone until the opening into the peritoneum has permitted the relations of the bladder to be ascertained.

The mortality of the cases in which the bladder has been wounded is large, namely about 30 per cent.; but this is due to the complicated and serious character of the cases in which the accident has occurred, the consequently increased length of the operation and the greater danger from shock, rather than to the mere vesical injury. The latter, indeed, does not seem of itself to be very important as influencing the recovery of the patient; but, notwithstanding this fact, a urinary fistula adds greatly to her discomfort, and, occurring under such circumstances, must be productive of chagrin and annoyance to the surgeon.

Inasmuch as the bladder is recognizable with more difficulty when empty than when full, it would be better, in cases presenting doubtful features, to commence the operation with the viscus wholly or partly distended. When its position has become known, after the completion of the abdominal incision; it may be emptied by an assistant.

Treatment.—When it is known at the time of operation that the bladder has been cut or torn, the opening should be at once closed with a continuous suture of catgut or fine silk, applied so as to invert the edges of the wound and bring together the peritoneal surfaces. A permanent catheter ought to be used during the first two days. After the expiration of that time its constant use is usually unnecessary; and if the wound has been small—less than one inch in length—the instrument may be subsequently dispensed with. If, however, the wound has been large—exceeding two or three inches—the bladder ought to be artificially emptied as often as every three hours during three or four days additional. In all cases the catheter should be used so long as the urine contains blood.

In the case in which urine appears through the abdominal wound subsequently to the operation, at a time and under circumstances which might make it dangerous or inexpedient to reach the seat of the vesical injury, the catheter ought to be used either continuously or at short intervals, for the purpose of lessening the amount of urine which escapes through the fistula, and thus aid in the closure of the latter. If, however, the fistulous opening should show no disposition to close after two or three months, the edges ought to be freshened to the depth of half an inch or more and stitched together.

In exceptional instances it may be expedient to affix the wounded edges of the bladder within those of the abdominal incision, in the manner detailed by Thomas and others; but as this method must interfere, to some extent, with the subsequent contractility of the bladder, it is not to be commended as a usual practice. The suturing and "dropping" of the vesical wound is the better method.

THE TEETH AND ORAL CAVITY OF PREGNANT WOMEN.

Read in the Section of Oral and Dental Surgery, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY JOHN S. MARSHALL, M.D.,
OF CHICAGO.

From time almost immemorial, pregnancy has been recognized as having a deleterious effect upon the teeth; and this opinion has become so general that it has been crystallized into the familiar adage—"for every child a tooth." All writers upon obstetrics and the care of pregnant women, recognize the fact that during the periods of gestation and lactation women are more liable to suffer from diseases of the teeth and neuralgia of the facial region, than at other times; but the causes, prevention or mitigation of these diseases has received but little attention; in fact, it seems to be considered by most of them that they are among the inevitable consequences of gestation and that little can be done to relieve them.

With this view I do not fully agree, for I believe *much can* be done to prevent or relieve the suffering incident to caries and the loss of the teeth, and the neuralgic conditions of the face and mouth so common at this period. But in order to appreciate the causes and the treatment of these disorders, we must have in mind the changed conditions of the organism. The pregnant state is characterized by many and varied changes in the general system and in special organs, the most marked of which are those of the uterus, the genitals, and mammary glands, but which it is not necessary for us to take time to describe, as they are generally well understood. The changes which bear the closest relationship to our subject, are those of nutrition affecting the condition of the blood, the bones, the teeth and the excretions and secretions.

Pregnancy usually exercises a favorable influence upon nutrition; after the third or fourth month the appetite improves, adipose tissue is laid on and the body weight is progressively increased, so that at the completion of gestation, it is about one-thirteenth greater than before.[1] Many times, however, the reverse of this is met with; nutrition is so disturbed as to cause considerable emaciation and general debility.

The *blood* is increased in volume during the second half of gestation, as was demonstrated by Spiegelberg and Gescheidlen[2] in experiments upon pregnant bitches. Authorities, however, are not agreed as to changes in the character of the blood. Andral,[3] Nasse,[4] Meyer[5] and others claim that the watery elements and the white corpuscles are increased and the red corpuscles diminished. Ingerslev[6] could detect no diminution in the number of the red corpuscles; while on the other hand Fehling[7] found the hæmoglobin and the red corpuscles increased. Hypertrophy of the left ventricle, of temporary character, sometimes occurs as the result of increased labor thrown upon the heart consequent upon the augmentation of the blood mass. This was first made known by Larcher[8] in 1828. Venous congestion, varices, and swelling of the lower extremities and arterial hyperæmia of the upper half of the body is a frequent accompaniment of pregnancy. The causes of these conditions are not fully understood, but were attributed by De Cristoforis[9] to pressure of the gravid uterus upon the iliac veins preventing the return of blood to the inferior vena cava, and pressure upon the descending aorta, thus obstructing the normal flow of blood to the lower extremities and causing arterial hyperæmia of the upper portion of the body.

Changes in the constituent elements of the *bones* are of common occurrence as a result of malnutrition. Dalton[10] says: "Next to the chloride of sodium, the phosphate of calcium is considered the most important mineral ingredient of the body. It is met with universally in every tissue and every fluid"—and "whenever the nutrition of the bone during life is interfered with from any pathological cause, so that its phosphate of calcium becomes deficient in amount, a softening of the osseous tissue is the consequence, by which the bone yields to external pressure and becomes more or less distorted." Softening or decalcification of the bones undoubtedly takes place in a limited extent in many cases of pregnancy. In fractures occurring during gestation, union is often delayed, sometimes until after delivery. Padieu[11] describes a case in which fractures of the tibia and fibula occurred nine days after the suppression of the menses, and in which union was delayed until the end of gestation. The process of union began ten days after delivery and was completed at the end of a month. On the other hand, the bones of the extremities frequently increase in length, and osteophytes are sometimes formed both intra- and extra-cranial.

According to Förster,[12] in a little more than one-half of the cases of pregnancy examined after death, there were found deposited upon the inner surface of the skull, thin lamellæ of a bone-like formation, composed of phosphate and carbonate of calcium, and measuring from 1/6 to 1/2 of a line in thickness. These formations are most commonly found upon the frontal and parietal bones, in the neighborhood of the sulcus falciformis and the arteria meningia media, and usually occur after the third month. These formations are not, however, exclusively an accompaniment of pregnancy, for they are frequently found associated with tuberculosis, and might therefore be classed as effects of insufficient nutrition, rather than of over-nutrition.

The *pelvis*, though looked upon at all other times as a comparatively solid framework, frequently becomes relaxed in its articulations during pregnancy so that the sacro-iliac and pubic joints become movable. Luschka[13] demonstrated that these articulations were true joints. Lenoir[14] found in twenty-two pregnant women between the ages of 18 and 35, movement of the sacro-iliac and pubic articulations. Occasionally such movement is so great as to make locomotion difficult or impossible.

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[1] Hirst's American System of Obstetrics, p. 353

[2] Ibid., p. 345.

[3] Annals de Chymie et de Physique Juellet 1842

[4] Archives of Gyn. Bd. x, p. 338

[5] "Untersuchungen uber die Veränderungen des Blutes in der Schwangerschaft."

[6] Centralb. f. Gyn., 1870, p. 625

[7] Archives of Gyn., Bd. xxviii, Heft 3, p. 454

[8] Hirst's Amer. Syst. of Obstetrics, p. 346

[9] Ibid.

[10] Dalton's Physiology, fifth edition, p. 58

[11] Journal de Médicine et de Chirurgie pratique, 1857

[12] Handbuch der patholog. Anat., Vol. ii, p. 925

[13] Die Anatomie des Menschlichen, Bulens, Tubingen 1864

[14] Hirst's American System of Obstetrics, p. 341

Lawson Tait[15] is authority for the statement that the *thyroid gland* frequently increases in size during pregnancy, and that he noted in districts where goitre was endemic, and in women in whom there existed the predisposition, pregnancy may produce a temporary form of the disease or furnish the exciting cause for the development of the permanent disease.

The *spleen*, in all probability, is increased in size during gestation.[16] The functions of the *kidneys* are also heightened and in consequence of this they become somewhat larger.[17] The urine undergoes change both in quantity and quality; the aqueous elements are increased in consequence of the augmentation in the blood mass and the high arterial tension. Winckel found no change in the amount of urea, sodium chloride, sulphates and phosphates daily excreted. Chalvet and Barlemont, on the other hand, found the chlorides increased in quantity and the phosphates, sulphates, urea, uric acid, creatin and creatinin diminished in amount. Lehmann and Donne[18] have suggested that the cause of this deficiency was due to the extra demand for these substances in the development of the fœtus. Glucose and albumen are not infrequently present in the urine during pregnancy. An increase in the *salivary* secretions is often a noticeable symptom. *Ptyalism*, when present, manifests itself early and usually disappears spontaneously between the third and fourth months. It occasionally persists, however, in an aggravated form during the entire period of gestation and even for several weeks after, and the amount secreted may be so great as to endanger the life of the patient. The qualitative changes in the saliva during pregnancy are sometimes quite marked. The water is increased, while the organic and inorganic elements are diminished. Schramm reported one case in which the ptyalin was entirely absent. In those cases in which excessive ptyalism is manifested the buccal mucous membrane is more or less inflamed, the parotid, submaxillary and sublingual glands are swollen and tender, and quite painful when their functions are especially excited. Fetor is not present, and the absence of this symptom distinguishes it from mercurial ptyalism. The cause of this disorder is in all probability a reflex neurosis, and it frequently reappears in successive pregnancies. *Gingivitis* is another common accompaniment of pregnancy, and is often present when there is no indication of salivation. Pinard is of the opinion that it is more common among multiparæ than primiparæ. This opinion is based upon seventy-five cases, of whom forty-three were multiparæ and thirty-two primiparæ. In the former the disorder was present thirty-one times, in the latter fourteen times. Gingivitis is characterized by redness and tumefaction of the gums, and a tendency to bleed on slight pressure or friction, as in mastication or the use of the tooth-brush; while the secretions of the mucous gland are often decidedly acid in reaction, as may be easily proved by litmus paper. Treatment should consist of saline cathartics and astringent and antacid mouth-washes, and thorough cleanliness of the mouth and teeth.

Phagedenic pericementitis is occasionally present during pregnancy, and right here let me call your attention to the fact that this disease is often associated with rheumatic affections, diabetes mellitus and albuminuria, but just how it is associated in relation to cause and effect with kidney affections, I am unable to say, but would suggest that it is due to the accumulation of effete products in the system, possibly of uric acid, urea and the like. This disorder is characterized by tumefaction of the gums, which have a purplish tint along the margins, the festoons are swollen and detached from the teeth, and bleed on the least provocation; many of the teeth are loose in their alveoli, from which pus constantly exudes, and in a majority of the cases examination of the roots of these teeth will show them to be more or less covered with calculus, the character of which is still in dispute, some claiming it is salivary, others serumal. After a little time the gums begin to recede from the necks of the teeth, and it is not by any means rare for this disease to progress so rapidly that one or more teeth are lost by the disorder before the completion of gestation. The disease usually persists after delivery, but not with such rapid progress as before. Treatment consists in removing the deposits from the affected teeth, incising the gums down to the bottom of each pocket to give drainage for the escape of the discharges, the application to the parts of a saturated solution of iodine in wood creosote, and the use of astringent and antiseptic mouth washes.

The changes in the *nervous system* due to the effects of pregnancy are many and varied, the character being determined largely by the individual susceptibility of the patient to nervous irritation. As a rule, the emotions are more easily excited than at other times. Some are bright and happy, others despondent, moody or peevish. Functional disorders of the special senses are not infrequent, vision may be impaired, the hearing affected, or perversions of taste and smell may occur. Neuralgic affections are quite common during pregnancy, and most frequently affect the face and head. Odontalgia, tic douleureux, local anæsthesia and paresis are the most common forms.

Odontalgia is generally the result of dental caries which penetrates to the pulp and sets up an acute or chronic pulpitis, or may be caused (as recently stated by Dr. W. W. Allport[19]), by hyperæmia of the pulp, due to the augmented volume of blood, increased arterial pressure and capillary hyperæmia of the upper half of the body. In proof of this statement by Dr. Allport, I would call attention to the fact that a brisk cathartic will often relieve, or entirely control an attack of odontalgia, or a congestive headache, by simply relieving general arterial tension and local hyperæmia of the parts by depleting the circulation; this relieves the blood pressure upon the nerve filaments of the pulp or the meninges of the brain, and the pain ceases. Tic douloureux, local anæsthesia and paresis of the facial region are generally considered to be due to a reflex neurosis, but the point made by Dr. Allport is worthy of careful consideration. Odontalgia due to pulpitis can be controlled by devitalizing the pulp, and the tooth be made permanently useful by appropriate after-treatment; a temporary stopping is all that should be attempted until after delivery if the attack occur during the latter months of gestation, but in the earlier months there need be no fear, in a majority of cases, in performing a permanent operation if it be not too fatiguing.

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[15] Obst. Jour. of Great Britain and Ireland, 1875.

[16] Wood's Handbook Medical Sciences, Vol. vi, p. 5.

[17] Hirst's American System of Obstetrics, Vol, i, p. 334.

[illegible]d., Vol. i, p. 354.

Nervous disorders due to the changed condition of the system during pregnancy usually disappear soon after delivery, but they occasionally persist during lactation. The treatment of neuralgic conditions of reflex origin, and nervous disorders in general, should be relegated to the family physician, as they need general treatment and therefore come more especially within his province. Quinine, iron, or other general tonic treatment, however, is indicated, with change of climatic surroundings.

The statement has been made that softening and decalcification of the bones takes place to a limited extent in certain cases of pregnancy, but whether the change is due to a failure of the nutritive processes to supply the waste constantly going on in all the tissues of the body, or an actual resorption of the inorganic materials to supply these elements to the forming fœtus, I am unable to state, but am of the opinion that it is the result of both faulty nutrition and the lack of supply of the proper elements to the system. In some cases it is certainly the direct result of faulty nutrition incident to the pregnant state. In others inability to take food, as in those cases where for months the stomach is in such an irritable condition as to make it impossible to retain sufficient food to properly nourish the body; while in others it is the result of an improper diet.

Many women are in the habit of discarding from their aliment during pregnancy all those foods which contain an abundance of calcium salts, and restrict themselves, as nearly as possible, to a fruit diet, believing that by such practice the bones of the child will be imperfectly calcified, and thus parturition will be robbed of much of its suffering. There is no scientific evidence that such a result is obtained; while on the other hand, as in those cases affected with hyperemesis, though the child when born may be small and much emaciated, it has the appearance of being properly formed and its bones as dense as in the majority of normal pregnancies, and the fact seems to be pretty well established that the osseous framework of the fœtus is formed in such cases at the expense of the maternal organism.

We have no knowledge that a chemical analysis has ever been made upon the teeth of the same individual before and during pregnancy in cases like those just described; and without such an analysis it could not be dogmatically asserted that there was or was not a quantitative change in the inorganic materials of the teeth, but reasoning from analogy, we would expect to find the same conditions existing in the teeth that are undoubtedly present in the bones, and brought about by the same causes.

Clinical observation would seem to substantiate such a proposition, for every observing and thoughtful dentist of even limited experience could relate cases in which a material and an appreciable softening of the dentine occurred during the pregnant state of many of his patients. This condition is an important predisposing cause of caries, and is often present in adults and in school children of both sexes, as a result of overwork, anxiety or excessive mental strain.[20]

The principal exciting cause of caries during pregnancy, as in all other cases, is the ever-present lactic acid fermentation, but its action is greatly augmented by the changed conditions of the salivary and buccal secretions. The acids found in the secretions of the mouth as a result of the disorders incident to the pregnant state, are acetic, hydrochloric, uric and oxalic. Consequently in those cases where the dentine has been rendered abnormally soft—deficient in calcium salts—there is likely to be a very rapid breaking down of tooth structure during pregnancy and lactation.

Long tedious operations, like the restoration of form in decayed teeth with gold, are inadmissible during gestation. All operations upon the teeth at such times should be as free from pain and fatigue as is possible, from the fact that in certain cases miscarriage might be the result. Caries of the teeth can be arrested by the use of temporary fillings like Hill's Stopping, or oxy-phosphate cement, until such time as the patient is in condition to bear the nervous strain incident to large gold operations. Among the most valuable of preventive measures are a thorough and frequent use of the tooth-brush and floss silk at least three times per diem, supplemented by tooth powders, and antacid mouth washes.

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[19] Paper on "Neuralgia," read before the American Medical Association, June, 1889.

[20] Jacob L. Williams, Journal Am. Med. Assoc., 1885.

I am aware that I have not discussed this subject as its great importance would seem to deserve, and had time permitted, I should have been glad to have elaborated many points that have been only just alluded to. I trust, however, that some of these points may receive more extended treatment in the discussion that shall follow.

"The Argyle," cor. Michigan Ave. and Jackson St.

DRAINAGE IN ABDOMINAL SURGERY.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY CHARLES BINGHAM PENROSE, M.D., Ph.D.,
OF PHILADELPHIA.

Drainage of the peritoneum, though one of the most important subjects in abdominal surgery, is yet one which still stands in a most uncertain position. The reason of this uncertain position is primarily a dread of evil consequences from the tube; a fear that the tube will act as a source of septic infection and death. Other less important reasons militate against the use of the drainage tube, but collectively they have but little weight when compared with the terror, which most surgeons feel, of introducing a dangerous element of septic infection in any case where a drainage tube is employed.

As long as this fear exists the abdominal drainage tube can never be viewed in a proper light. And it is one of my chief objects in presenting this paper, to attempt to place the subject in a more scientific position, by showing how groundless all such fears are, if the drainage tube is properly used.

But little light on this subject can be obtained by investigating the practice of noted operators. A very few operators—as Olshausen—altogether discard the abdominal drainage tube, asserting that it is in no case necessary. (*Die Krankheiten der Ovarien*, 1886.) Others—like Bantock and Tait—use drainage freely and with confidence, never allowing fear of evil consequences from the tube to affect their decision about its use in any case. Others—and perhaps the largest body—occupy a medium place; they dread the tube, but sometimes feel obliged to use it, because they dread more sepsis from absorption of undrained fluids in the peritoneum. The last hold a most unsatisfactory and a most unscientific position; and probably have the largest mortality after their operations.

If one surgeon, or class of surgeons, can use the abdominal drainage tube in a long series of cases, with a very small mortality—a mortality no greater than occurs in the same hands in a similar series of undrained cases, it certainly proves that the drainage tube properly used is not a source of danger. And it follows from this, that, if other surgeons have a much greater mortality when the tube is used than when it is discarded, the reason is that they do not employ the tube in a proper way.

The important point to observe, in the use of the abdominal drainage tube, is frequent and careful cleaning. Cleaning which can be performed by any neat nurse. If the statistics and practice of different operators are observed, it will be found that, in most cases, a large mortality and infrequent cleaning of the tube go together. We often are advised to make the first inspection of the tube not earlier than twelve hours after the operation—in some cases twenty-fours hours. An investigation of cases subjected to this plan of treatment will, by the mortality, show, unquestionably, the value of frequent cleaning. I will refer to one striking illustration of the truth of this remark. There appeared recently a paper on drainage in which the writer says, "the first inspection of the tube for fluid need rarely be made earlier than twelve hours after the operation." He then gives his mortality in a series of drained cases as over 50 per cent. Compare this advice and these statissics with those of Bantock, who operated without a death on a series of 45 drained cases in the Samaritan Free Hospital, and who advises that the drainage tube be cleaned every two or three hours; (*British Medical Journal*, June 30, 1888). Or with the statistics of Joseph Price, of Philadelphia, who uses drainage in about 50 per cent. of his cases of laparotomy, with a mortality as small as in the undrained cases, and who cleans the tube from every one to three hours. In my own practice, I have operated for disease of the uterus or its appendages, on 40 successive drainage cases with one death. I frequently have the tube cleaned as often as every half hour: and in introducing it, I think of it no more as a source of danger, than if I introduced an extra suture in the abdominal walls.

Many similar statistics could be given, which show that, in some hands, the drainage tube adds nothing to the mortality after laparotomy, and consequently that when it seems to increase the mortality, the cause is to be sought in the method of using the tube, and not in the tube *per se*.

No fixed time can be set for cleaning the abdominal drainage tube. It should always be cleaned when it is filled with fluid, and sometimes it is filled fifteen minutes after the patient has been returned to bed. By cleaning I mean the thorough emptying and drying of the tube, and the introduction of a fresh capillary drain if one is used.

Our object, after most cases of laparotomy, is to dry, as quickly and completely as possible, all the peritoneum beyond the neighborhood of the tube; and to do this the outward flow should be as free as possible. Such, however, is not the case when the drainage tube is full of fluid, for the intra-peritoneal accumulation is then subject to a backward pressure equal to the weight of a column of liquid four to six inches in height. A pressure, in cases where there is no distension, sufficient, not only to stop the outward flow, but to cause a backward percolation of fluid between non-adherent intestinal loops. Therefore, to favor rapid occlusion of the general peritoneum from the sink in the hollow of the sacrum, and from the drainage tube tract, frequent cleaning is of the greatest importance.

I do not hesitate to say that, if a drainage tube is frequently inspected, and if all manipulations are performed with the strictest cleanliness, a patient, after laparotomy, is as safe, if not safer, with a tube than without one.

If we admit this fact, that a drainage tube in the abdomen need not be looked upon as a source of danger, we are in a proper position to decide the question: In what cases is drainage necessary?

The object of the drainage tube is the prevention of accumulations of fluid in the peritoneum. The dangers to be feared from such accumulations are septic changes, which may produce general or local trouble. These changes, if not pre-existing, are generally caused by septic matter introduced from without; but it is also very probable that infection may occur through the intestinal walls; especially if the intestinal coats are in a pathological condition from over-distension or other cause. At the same time, it must be remembered that the healthy peritoneum is a very rapid absorber; and large quantities of fluid may be absorbed before sufficient time has elapsed for septic decomposition to take place. A very rough idea of the absorbing power of the healthy human peritoneum may be obtained from experiments on dogs and rabbits; and, if we calculate proportionally for man, we find that the human peritoneum can absorb from five to twelve pints of fluid in one hour, or, in from twelve to thirty hours, a quantity equal to the body weight. (*Der Krankheiten der Ovarien*, von Robert Olshausen, 1886.)

Cases demanding drainage can be arranged under the following heads:

1. Where the operation has been of long duration and there has been much manipulation, and we fear excessive secretion from the irritated peritoneum.

2. Where extensive raw surfaces, or bleeding adhesions are left, or where we fear bleeding from any other cause.

3. Where there is existing peritonitis, or ascites.

5. Where septic matter has escaped into the peritoneum, or where portions of tumor are left.

5. Where there is a malignant disease, and we fear subsequent infection.

By excessive secretion from irritated peritoneum I mean more fluid accumulation than can be reabsorbed before septic changes take place. And, in this connection, we must consider, not only whether the peritoneum is in a condition to absorb fluids, but also whether the patient's condition is such as to stand such absorption; whether the emunctories are sufficiently active to excrete the absorbed material. For this reason drainage of the peritoneum is much more frequently indicated in old, than in young people.

No absolute rules for drainage can be given; and consequently there is always room for a difference of opinion in any case which comes under the preceding headings. The irritated peritoneum may not secrete excessively; or the blood from adhesions may not be too great to be absorbed, but if, in any case, there is a particle of doubt about such points, the drainage tube should be unhesitatingly used.

The drainage tube is not only of service in draining blood from the peritoneum, but, in cases where excessive bleeding is feared, it serves as an important indicator to the operator. It not only itself, for some reason, seems to act as a valuable hæmostatic, but it also enables the surgeon to detect undue hæmorrhage *in time* to check it. In three cases Tait has controlled hæmorrhage by the injection of perchloride of iron through the tube. (*Brit. Gyn. Journal*, August, 1887.)

The necessity for drainage depends to a great extent upon the operating surgeon. Skill, rapidity and neatness in operating, by diminishing exposure and irritation of the peritoneum, enable many surgeons to do without drainage in cases which would demand it in other hands. And for this reason the practice of no one operator can be taken as a guide. Every surgeon must determine for himself whether drainage is necessary in any case, and it is much safer for him to use the tube too frequently rather than too rarely.

I have thus far spoken only of one tube, not because we need to be limited to one drainage tube in abdominal surgery any more than in other branches of surgery; but because the great majority of abdominal operations are done for disease of the ovaries and Fallopian tubes, and consequently the seat of operation is altogether in the pelvis, the upper part of the peritoneal cavity being generally entirely undisturbed. For this reason, *in such cases*, the single straight glass tube drains not only the hollow of the sacrum—the natural sink of the peritoneum—but also the whole field exposed in the operation. But in other cases, as in general purulent peritonitis, it may be necessary to drain, in addition to the hollow of the sacrum, the renal gutters, or other parts of the peritoneum. And if the tubes are used, not only for drainage, but also for subsequent peritoneal irrigation, the use of two or more tubes, placed wherever indicated, is of great value.

In some cases it is desirable to use a tube combined with a capillary drain of gauze or wick, or even gauze or wick alone, placed in strips from the cavity or part to be drained to the abdominal wound.

Capillary drainage is in many instances a most desirable method; possessing the advantages of promptness, thoroughness and complete exclusion of air; at the same time giving entire rest to the patient and to the parts surrounding the drain; and permitting more movement of the body. In such cases wicking answers better than gauze, since it acts as a faster drain, and is less liable to become incorporated with surrounding tissues, and thus render removal difficult. These drains can remain in place for several days—as many as ten or fourteen—if the superincumbent gauze is frequently changed and the discharges are not septic to begin with.

For discussion of this subject with report of cases see article by Ludwig Piskachek, *Medizinische Jahrbücher*, neue Vol. iii., Jahrgang, 1888.

The determination of the length of time during which the general peritoneum remains open to drainage is of importance in discussing the use of the abdominal drainage tube. Theoretically, an aseptic, unirritating drainage tube ought never to become shut off by adhesions from the general peritoneal cavity; since peritoneal adhesions imply more or less irritation. The length of time, therefore, during which the tube acts as a general drain depends on the condition of the tube and the character of the discharges, which are carried throught it. Tait (*Brit. Gyn. Journal*, August, 1887) says that irrigation of the peritoneal cavity through the drainage tube becomes impossible, on account of adhesions, seventy or eighty hours after operation. And this is probably the usual time in clean cases. That this time, however, is subject to very considerable variations, is shown by the following cases, which have occurred in my own practice.

In a case of purulent peritonitis where laparotomy was performed, and peritoneal irrigation was practiced through three tubes placed in the abdominal cavity, general drainage, and the possibility of general irrigation, ceased to exist twenty-two hours after the introduction of the tubes. (This case is reported in *Annals of Gynecology*, 1888.)

In a case of stab wound of the transverse colon, when the patient died of cerebral embolism seventy-six hours after laparotomy, the autopsy showed that there were no peritoneal adhesions around the tube, the peritoneum being dry and the tube perfectly free.

In a third case, of dermoid tumor, where general peritonitis appeared three days after laparotomy, the discharge from the drainage tube, which had for two days been very slight, suddenly increased, and for five days later large quantities of sanguinolent serum flowed continuously; showing that much of the peritoneum was still open to drainage even seven days after operation. A singular phenomenon occurred after an operation by Dr. Baldy of Philadelphia. Abdominal hysterectomy was performed for a uterine myoma. Ascites was present at the time of operation, and for eleven days afterwards from one to three pints of serum flowed daily from the drainage tube.

These cases are sufficient to show that the duration of general drainage depends to a great extent upon the nature and treatment of the case.

As has been said the chief immediate danger to be feared from a drainage tube is septic infection or septic peritonitis, and I have attempted to show how slight is the risk of such infection if proper care is taken of the tube. There are, however, other accidents, or sequelæ imputed to drainage, which, though not of immediate danger to life, are yet at least annoying, retarding convalescence, and in some cases, if uncured, ultimately causing death. And a fear of these minor dangers is often sufficient, in case of doubt, to turn the decision of the surgeon against the drainage tube.

Such accidents, or sequelæ, are:

1. The formation of local peritoneal adhesions around the drainage tube, and the persistence of a fibrous band in the site of the tube tract, which may cause subsequent bladder trouble, or intestinal strangulation.
2. The incarceration of omentum, or shreds from adhesions, through the perforations of the tube.
3. Prolonged suppuration from the drainage tube tract, or an incurable sinus.
4. Fæcal fistula from pressure of tube on intestine.
5. Ventral hernia resulting from imperfect approximation of fascia and muscles.

I will consider these real and imaginary sequelæ of drainage in the order in which they have been stated. Though local peritoneal adhesions may be more frequent in drainage cases, yet I have never observed that these patients complained subsequently of symptoms indicative of such adhesions, any more than patients in whom no tubes had been used. These adhesions generally disappear very quickly; and this is also the case with whatever fibrous band may follow the tube. Of course a discharging sinus, especially if an old one, exists as a firm organized structure, extending from the origin of the sinus, to the parietes; but even such tracts disappear after they cease to discharge. In order to cure ventral hernia, I have had an opportunity of reopening the abdomens of two patients in whom drainage had been used; and have consequently been able to determine the existence of any adhesions or fibrous band which might have been produced by the drainage tube.

In the first case the primary operation had been done for double pyosalpinx and peritonitis. The glass drainage tube had remained in the abdomen for three days, being replaced by a rubber tube which was used for several days longer. The second operation, for the relief of the resulting hernia, was done two years later. The omentum was then found slightly adherent in the hernial sac; but there were no other peritoneal adhesions of any kind. The finger, introduced to the hollow of the sacrum, found no adhesions and no trace of the drainage tube tract.

In the second case, the primary operation was done for extra-uterine pregnancy. The glass drainage tube had remained in the abdomen for eight days, and was then replaced by a rubber tube which was used for two weeks longer. After removal of the rubber tube a discharging sinus remained unclosed for about three months. Here, more than in the first case, I expected to find some pelvic adhesions and some trace of the old drainage tube tract and the resulting sinus. When, however, the ventral hernia was operated on, eighteen months after the primary operation, there was no trace of a fibrous band or of any peritoneal adhesions beyond the omentum, which was very slightly adherent to the neck of the sac.

Incarceration of omentum or shreds from adhesions is not an uncommon accident even when the perforations of the tube are not of undue size. It may be avoided by occasionally lifting or rotating the tube after cleaning. When, however, the accident has occurred, it is necessary, in order to remove the tube, to cut off the incarcerated tissue with a long knife, or other instrument introduced through the tube.

Prolonged suppuration from the drainage tube tract results, in most cases, from the breaking down of tissue which had not been removed at the primary operation; from an infected ligature; from syphilis; and from tuberculosis. The abdominal drainage tube of itself does not cause the sinus any more than does a drainage tube in other parts of the body. The sinus is the result of some pathological condition at the bottom or sides of the drainage tube tract, and frequently occurs after laparotomy even when no tube had been used. If it is due to either of the first two causes—unremoved morbid tissue or an infected ligature—it will close of itself when all foreign matter has been removed. And it is fortunate for the patient that it remains open until such removal has taken place; since otherwise accumulation would occur within the abdomen. It is not an unusual thing to be obliged to reopen an abdomen in order to evacuate pus pockets formed around infected ligatures, or unremoved morbid tissue. A sinus caused by syphilis can of course only be closed by antisyphilitic treatment. Such a sinus existed in the second case of ventral hernia to which I have just referred.

When tuberculosis is the cause, the sinus generally will not close until all tubercular tissue has been removed. Two such cases have occurred in my experience: in one there was tubercular salpingitis, and tuberculosis of the lumbar lymphatic glands; in the other there was tubercular salpingitis with general tubercular peritonitis. In each case there still exists a ventral sinus.

A danger always to be feared from an unclosed sinus is the ultimate production of a fæcal fistula, and when a sinus persists, attempts should be made, even by a subsequent laparotomy, to remove the cause.

Fæcal fistula caused by pressure of the drainage tube on the intestine is by no means an imaginary danger; occurring most frequently when the tube rests on a diseased area of the bowel—such as may be left after the separation of peritoneal adhesions. This accident can be avoided by the frequent lifting of the tube after cleaning, or its replacement, after some hours, by a shorter and smaller tube.

There are certain cases where we always fear subsequent leakage of fæces. Where the outer intestinal coats have been torn in the separation of adhesions, or where a part of the bowel wall is in a doubtful, lowly vitalized condition, from adhesion to a suppurating tumor, or abscess cavity. And it is in these cases that the large glass drainage tube serves a most valuable purpose by providing for the free evacuation of fæces if any should escape from the intestine. This accident is not uncommon and is sometimes unavoidable, and often the fæcal discharge, though at first composed of all the contents of the intestine, will subside as the patient recovers until all passes by the natural way.

The last sequelæ of drainage to which I have alluded is *ventral hernia*. The drainage tube, by preventing perfect approximation of muscles and fascia, undoubtedly to a certain extent predisposes the patient to subsequent ventral hernia. The accident, however, is not a very common one, having occurred, in my own experience, in about 5 per cent. of the drainage cases. And it must not be forgotten, in this connection, that hernia also occurs when no tube has been used.

When hernia follows laparotomy it can always be cured, safely and easily, in a subsequent operation, by the thorough exposure of the recti muscles and the fascia, the complete removal of all cicatricial tissue, and suturing as in any case of primary laparotomy.

In conclusion, I will very briefly repeat the chief principles which I have attempted to impress in this paper:

1. The abdominal drainage tube, properly used, does not increase the mortality after laparotomy.
2. Confidence in this fact is necessary for a correct determination of cases requiring drainage.

3. Frequent careful cleaning of the tube is of the greatest importance.
4. The few annoying sequelæ attending the use of the drainage tube can be avoided or easily cured.
5. It is safest to use the drainage tube too often, rather than too rarely, as we would in case of doubt use any other precautionary measure.

RECOVERY FROM SYMPATHETIC OPHTHALMIA INDUCED BY A SARCOMA OF THE CHOROID.

Read in the Section of Ophthalmology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY F. C. HOTZ, M.D.,
OF CHICAGO.

Mr. M., aged 56 years, a robust man of regular habits, noticed in August, 1887, a gradual failing of the sight of his right eye; and by the end of September the sight was entirely extinguished. Up to that time he had no pain or unpleasant feeling in or about his eye; but during October he had frequent paroxysms of violent pain in the blind eye and extending over the right side of the head.

October 29, after a very severe attack of this headache, Mr. M. called for a consultation, and the examination of the eye showed the following conditions:

"Slight œdema of the upper lid; fulness of conjunctival and episcleral veins; hazy and lusterless cornea; shallow anterior chamber; pupil immobile and dilated *ad maximum*; lens transparent, but vitreous absolutely impenetrable for light; T. + 3: no perception. L. E. V. = $\frac{20}{20}$ with + 2 D.; normal fundus."

As the sight had been slowly and painlessly extinguished before any of those violent symptoms of glaucoma appeared, it seemed most likely the glaucomatous state was caused by an intraocular tumor. The removal of the eye, therefore, was urgently advised, but as usual, the patient was not prepared to accept this advice at once. However, after he had gone through a few more and exceedingly severe attacks of hemicrania, he became very anxious to be relieved of the source of his suffering; and November 5 the eye was enucleated; the instruments were disinfected with carbolic acid (5 per cent.); the eye and lid was washed with sublimate solution (1:5000); the wound was closed with aseptic silk and dusted over with iodoform.

Neither on the day of the operation nor on the two following days when I visited the patient at his house, anything unusual could be noticed in the external appearance of the left eye; nor was there any particular occasion for using the ophthalmoscope on those days, as the patient did not observe any disturbance of the sight, and described the feeling in his left eye as perfectly natural. As the healing progressed very satisfactorily the patient was instructed to call at the office in two or three days. He did not come until November 12 because the right eye was doing well; but since two days, he said, the left eye had been getting red, sensitive to light, and the sight seemed to grow a little dim. This was found to be true, V. being only $\frac{20}{30}$; slight pericorneal injection; clear cornea and anterior chamber; pupil of medium size; numerous posterior synechiæ which however were all easily broken by a few instillations of duboisine. When the pupil was fully dilated its field presented a very peculiar appearance under focal illumination. In the center there was a clear area exactly corresponding in size and form to the form of the pupil before duboisine had been used. The outline of this clear space was marked by a circle of very fine brownish dots (pigment from the synechiæ), and beyond this circle the anterior surface of the lens was covered with a film made up of innumerable thin and short fibres of a light brown color, irregularly curved and bent and promiscuously mixed together into a loosely woven network. Plainly visible though this film was by focal light, it offered surprisingly little obstruction to the ophthalmoscopic examination by which no disturbance in the vitreous and fundus could be detected. Under the use of duboisine the pupil was kept dilated and the pericorneal redness slowly disappeared; but otherwise no change occurred during the next ten days. In the night of November 24 a fire breaking out in the neighborhood, the patient stood for a long time at an open window to watch the fire and was thoroughly chilled. The eye became very red, painful and tender to the touch. All these symptoms, however, had subsided under warm fomentations and absolute rest in the dark room, when in the night of December 9, the patient accidentally gave his eye a severe blow with the finger.

In the morning (December 10) his sight was so poor that he could not recognize any one near him; conjunctiva of the lower lid red and swollen; copious secretion of mucus; much pericorneal injection; cornea streaked with interstitial opacities; lower part of iris swollen and dull, and the pupil not as fully dilated as before. Cocaine was used in addition to duboisine; and the eye improved so that December 17, the cornea was again clear and bright; V. good; and the fundus which could be seen very well with the ophthalmoscope, showed normal appearance. But this favorable condition did not last long; for on December 20 it was recorded "the pericorneal injection increasing; cornea streaky; dense exudate along lower border of pupil." And from that day the eye became worse every day; the cornea very cloudy; iris swollen, pupil smaller, and eyeball tender to the touch; and finally the tension showed an appreciable increase. The eye seemed doomed; for an iridectomy under these circumstances promised no good; and without it the pupil would be closed by the inflammation, and the sight destroyed by the increased tension. What should be done to ward off the terrible fate—this was the question I anxiously sought to answer while sitting by the patient's bedside. I carefully scrutinized every symptom and the changes in the eye from day to day. Now duboisine had been used all this time, and when with the increase of the inflammation the pupil showed a tendency to contract the mydriatic was applied more frequently; but I quickly perceived that the oftener it was instilled the worse the eye seemed to do; and I soon persuaded myself the unfavorable course the eye had been taking, was probably caused by the mydriatic. Its use was, therefore, stopped at once and the artificial leech was applied to the temple; and in two days the most alarming symptoms had disappeared, and the pupil instead of getting smaller remained as large as it was originally before any mydriatic was used, and has retained this size to this day.

After the duboisine was discontinued the eye never showed so serious and alarming symptoms, although all through the months of January, February and March it showed frequent attacks of slight corneal and iridic inflammation, to counteract which I relied exclusively on leeches which were applied alternately to the temple and to the neighborhood of the inner canthus. So telling was the immediate effect upon the appearance of the eye that the patient's wife, who proved an excellent nurse as well as a good observer, noticed it at once, and several times when she saw the pericorneal injection return she applied leeches with the desired success without first waiting for my order. They were applied at least a dozen times and not in one single instance did they fail. Just to give an illustration of their prompt action, I will copy the memorandum for January:

January 6, 1888. Eye slightly redder, and watery; pain over eyebrows; but Tn. Leeches.

January 7. No pain; redness almost gone.

January 13. Pericorneal injection increasing since yesterday; cornea getting hazy and iris dull. Leeches to nose.

January 14. Injection very faint; cornea clearer; iris brighter.

January 19. Since yesterday eye red again; cornea duller. Leeches.

January 20. Less redness; cornea brighter.

January 22. Injection again increasing.

January 23. Eye still more irritated, getting quite tender. Leeches.

January 24. The eye quite comfortable; injection greatly dimished; cornea much brighter.

In February and March the free intervals grew longer and after the beginning of April the eye remained free from irritation. By April 14 the cornea had cleared up so that an ophthalmoscopic examination (the first since November) could be obtained; it showed a normal fundus. But the test of the sight brought another surprise, inasmuch as the eye which before had a H. $\frac{1}{18}$, now showed M. $\frac{1}{36}$; V.=$\frac{20}{40}$; and while then it required + 12 for reading, now + 18 was the best reading glass.

At the last examination, February 29, 1889, the same degree of M. $\frac{1}{36}$ V. $\frac{20}{40}$ was found. This remarkable change of refraction from H. to M. might have been brought about in two ways: either the whole lens might have been pushed forward, or the convexity of its anterior surface might have been increased. The latter presumption seems to me the more plausible explanation; for we can well imagine that the long continued inflammation of the pars ciliaris chorioideæ had resulted in a permanent contraction of the ciliary fibres, by which the tension of the zonula was released and the lens allowed to become more convex. The appearance of the iris seemed to indicate that such changes had occurred; for its periphery was decidedly retracted so that the "filtration angle" was much larger than under normal circumstances, while the bulk of the iris stretched over the anterior surface of the lens like a tight-fitting glove, was so strongly convex that it formed a very sharp angle with the retracted periphery. The tension was normal; lens and vitreous were perfectly transparent and the fundus presented a normal appearance.

And here is another interesting point. If the tension of the vitreous chamber is controlled by constant flow of fluid from that cavity through the zonula into the aqueous chambers, how can we account for the fact that tension remained normal in this case, when the drainage was completely blocked by the iris being firmly glued to the anterior capsule of the lens? Is it possible that the filtration at the optic disc, which under ordinary circumstances seems to be very insignificant, may have become more active when the ordinary route was obstructed?

To complete the history of this case I have to give a brief report of the examination of the enucleated eye. It contained a large melanotic sarcoma springing from the nasal side of the fundus, and filling the larger portion of the vitreous chamber. Forward the growth had advanced to the ciliary ring; outward it was just on the point of breaking through the sclera, and backwards it reached to a line 6 mm. from the optic papilla. The nasal half of the choroid had entirely disappeared in the tumor; the temporal portion exhibited all signs of an intense plastic cyclo-choroiditis. The retina was completely detached and the vitreous, of course, gone. Under the microscope the tumor showed the well-known structure of round-cell sarcoma with an abundance of pigment cells; in places these prevailed to such an extent as to form deep black spots. The papilla and optic nerve were not invaded by the sarcoma and showed no structural changes; the sheath of the nerve was swollen and its connective tissue contained numerous new cells; the intervaginal space was greatly distended and filled with fibrine and lymph cells.

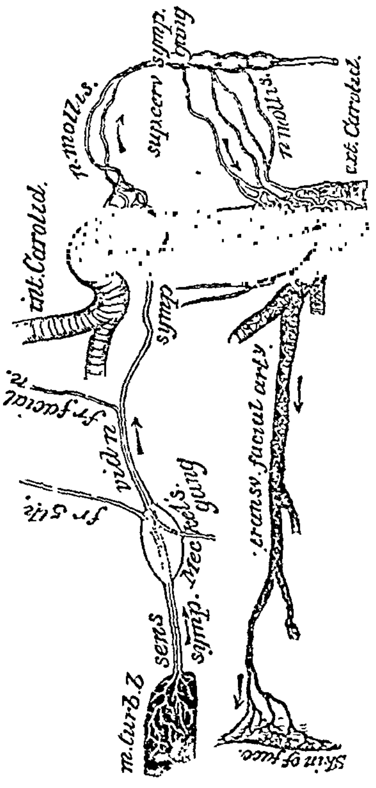
In conclusion I wish to say that although the sympathetic inflammation became manifest after the enucleation, it would be contrary to all our experience to assume a causative connection between this operation and the sympathetic affection. There is no case on record in which the symptoms of a sympathetic iritis were so fully developed, as in this case, five days after an injury or an operation. And I suppose if the eye had been examined between the second and fifth day the first indications of the inflammation would most likely have been noticed even at that time.

THE RELATIONS BETWEEN ACNE AND DISEASES OF THE NASAL CAVITY.

Read in the Section of Dermatology and Syphilography at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY CARL SEILER, M.D.,
OF PHILADELPHIA.

I bring before you, gentlemen, a subject which should be of a great deal of interest to you all as dermatologists, and it is of particular interest to me as a rhinologist. It has been my fortune, or perhaps misfortune, during the last ten years to observe a large number of cases of acne among the better to do class of people whose ages ranged from fourteen to fifty years, and I have noticed that the acne has borne a certain relation to the condition of the nasal chambers, becoming worse with a head-cold, gradually disappearing as the nasal irritation has disappeared, finally becoming entirely well when the nasal disease was cured, and that too without any external application or internal treatment. I made this observation, as I have said, in a large number of cases, and about eighteen months ago I made mention of the fact in a communication to the county medical society of Philadelphia. The point I would like to raise here (as of course I cannot teach you anything about acne, about its varieties, the treatment, etc.) is that acne punctata is almost always associated with atrophic rhinitis, while acne rosacea is almost always associated with hypertrophic rhinitis. You know that the nerve supply of the nose is intimately connected with the vaso-motor system, coming as it does from Meckel's ganglion and being distributed to the skin of the face, neck, etc. Again, you also know that there is a large amount of erectile tissue in the nose though opinions differ as to its function. I hold that the erectile tissue has two functions. Its function in the penis is, of course, evident, but not so with that in the clitoris, vulva, or nose. Still, it must have a function, and I think it is that of a safety-valve or overflow, to relieve local congestion or venous turgescence in the surrounding parts. For instance, through emotional excitement the penis becomes erect. The mental influence acts upon the vaso-motor system, increases the blood supply in that part, and the erectile tissues of the penis receive the overflow. In the same way the capillaries of the nose, face, and neck are easily dilated, as is observed in the blush of shame or blush of any kind. If there were no overflow, or if the overflow were interfered with, a continued congestion would result, and it would, of course, centre mostly around the glandular tissue. The distribution of the nervous supply of these parts is very interesting, and I hope to picture it in a chart.



SCHEMATIC REPRESENTATION OF NERVES, ETC., INVOLVED IN THE PRODUCTION OF REFLEX SKIN RASHES OF THE FACE.

In this diagram *afferent sympathetic fibrillæ* (symp.) are seen leaving the middle turbinated process to join Meckel's ganglion, whence they accompany the *vid. n.* through a part of its course. On leaving it they shortly join the carotid process on the *intl. carot. art.*, from which they issue to enter the *supr. cervl. symp. ganglion.*

Efferent sympathetic fibrillæ, having a vaso-motor function, pass with the *nervi molles* to the branches of the extl. carotid. One such is traced by means of arrows to the congested area of skin on the face.

The argument in the context is that impressions following the *afferent* route to the ganglion are reflected along this *efferent* route as vessel-dilator waves to the area of integument exhibiting the condition of hyperæmia-erythema.

Acne usually appears about the time of puberty. At that time the involuntary erectile tissue is not yet fully developed. The influence of the nervous system is necessary for the development of the erectile tissue of the genital organs and elsewhere. In the meantime turgescence of the capillaries of the face takes place, the overflow is not taken up by the erectile tissue in the nose as this has not yet developed, and acne results. The appearance of acne in boys who practice masturbation, and its increase a day or so after the act is probably well-known to you all. I have observed it in a number of instances.

Another fact pointing to this etiological relation is the failure to relieve acne at this period as we have been led to hope by dietetic measures. I may say in conclusion that I have found little aid in my studies of this subject because of the very limited amount of current literature on acne.

DR. CORLETT asked Dr. Seiler whether he referred the acne to the nasal affection, or the nasal affection to the acne, the connection being a reflex one.

DR. SEILER said his belief was that the acne was caused both by the reflex influence of nasal irritation and the mechanical congestion which was not relieved by the erectile tissue of the turbinated bones. In other words, the influence was both nervous and mechanical.

DR. CORLETT thought the paper was a very interesting one, and said that besides being able to trace some cases of acne to derangement of the digestive system, he had also seen it appear in persons predisposed to it during irritation in the genital tract, as in gonorrhœa, and in boys after masturbation. He recalled one or two instances in which boys had assured him their outbreak of acne was due to masturbation.

DR. BRUSH inquired of Dr. Seiler whether he had not noticed a relationship between irritation of the genital apparatus and rhinitis.

DR. SEILER thought it was an undoubted fact that one erectile tissue was influenced by an affection of another. Thus when there was expansion of the erectile tissue of the genital organs it invariably produced dilatation of erectile tissue of the nose, particularly when congestion in the nose already existed, thereby making the rhinitis worse. It was a neurotic element which started the circle; the mechanical interference manifested itself in turn. He then had a patient with atrophic rhinitis and acne punctata. By care and treatment he could clear the acne up completely, but it would return as soon as he lost sleep, drank, and began masturbating.

DR. BULKLEY had often had patients with acne who also had some nasal trouble, and he had tried to induce them to go and have the disease of the nose treated, but they had not followed his advice. There might be a great deal in what Dr. Seiler had so well said.

The thanks of the Section were extended to Dr. Seiler and his paper was requested for publication.

FOREIGN PRACTITIONERS IN FRANCE.—One of the reasons assigned for the more careful examination of the qualifications for medical practice presented by foreigners in France, is the discovery of a diploma mill, located in Bennington, U. S., which is said to issue bogus diplomas at prices varying from $60 to $300.

THE REQUIREMENTS FOR PRELIMINARY EDUCATION IN THE MEDICAL COLLEGES OF THE UNITED STATES AND CANADA.

Abstract of the Report of the Committee, read at the Thirteenth Annual Meeting of the American Academy of Medicine, held at Chicago, Ill., Nov. 13 and 14, 1889.

BY J. E. EMERSON, M.D.,
OF DETROIT, MICH.

The report opened with the statement that it was the acknowledged inadequacy of preliminary education that furnished reason for a committee to report upon the subject.

Ideal preliminary educational equipment for the study of medicine had been sufficiently discussed by Drs. Gerrish and Connor at the meeting of the Academy in 1888. On their aspect of the question there was practical unanimity of opinion among the fellows of the Academy. All hoped for the day when every matriculant in an American medical college must have received the degree of Bachelor of Arts, Science or Philosophy.

It went on to say that the sources of information upon which it was based were primarily the annual official announcement of the medical schools, supplemented by the last annual report of the Illinois State Board of Health, and also carefully compared with the statistics compiled by Dr. W. G. Eggleston, of Chicago, and published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

It pointed out discrepancies in the results obtained from these two sources, as possibly explained by lack of candor on the part of some of the deans or secretaries of the medical schools.

The origin of many medical schools being solely for the personal preferment of the originators and the enhancement of their professional reputation and practice, and their continued existence being dependent on the fees received from students, no appeal to higher motives can successfully antagonize the purely selfish and mercenary motive that dictated their origin and governs their policy. The only motive likely to prove successful was the enforcement of State laws similar to the Illinois State medical law, which would make their diplomas worthless unless they enforced more stringent preliminary educational tests.

The number of medical schools in the United States is 121, of which three give only a preliminary course and do not grant diplomas. Fourteen are homœopathic, ten are so-called eclectic, three are physio-medical, and ninety-four are so-called "regular" schools.

Of the ninety-four "regular" medical schools, twenty-three have no obligatory preliminary examination for matriculation; four require only evidence of "fair" or good English education; fifty-five require an examination in the branches of an English education, or accepts, as an equivalent, a diploma of a high or normal school, or of an Academy, or a first grade teacher's certificate, or the certificate of a regularly organized county medical society. Three of these require deficiencies in Latin to be made up during the course; nine require an examination in English branches and Latin, or accepts the diplomas and certificates as mentioned above as an equivalent; one of these accepts as an equivalent for Latin a knowledge of German, French, or Scandinavian. Two require an examination in English branches and Latin, or accepts, as an equivalent, the diploma or matriculating certificate of a college, or of a school of arts, science or of mining. These are the Harvard Medical School and the College of Physicians and Surgeons of New York.

Of the fourteen homœopathic schools, one was shown to require an examination in English branches, or a certificate of graduation from some reputable school. Eleven require an examination in English branches, or the diploma of a high school, normal school or academy. Two require an examination in English branches and Latin; these are the medical department of Boston University and the homœopathic medical department of the University of Minnesota. The homœopathic department of this last university has the same requirements as the "regular" medical department.

Of the ten so-called eclectic schools, one requires a common school education; nine require an examination in the English branches or the diploma of a high or normal school or academy, or a teacher's certificate.

Of the so-called physio-medical schools, two require the usual examination in English branches or the diploma of a high school or academy, or a teacher's certificate. One was wholly disreputable, apparently.

Thus, of all the medical schools of the United States but thirteen require any preliminary knowledge of Latin, and twenty-three have no obligatory preliminary examination for matriculation.

The twelve medical schools of the Dominion of Canada not only require a much higher standard of preliminary education, but there is also a successful attempt to make the requirements practically uniform throughout the Dominion.

The medical matriculation examination of the McGill University Medical School may be given as an example of the medical matriculation of *all* the Dominion medical schools: 1. English language, including grammar and composition. 2. English history. 3. Modern geography. 4. Latin, including translation and grammar. 5. Mathematics, including arithmetic, algebra and geometry. 6. Elementary mechanics. 7. An option, either French, German, Italian or Greek, logic, botany, elementary chemistry. Degrees in arts received from any university in the provinces or Great Britain (*not* the United States) procure exemption from matriculating examinations.

Comparing the requirements of the Canadian with those of the American medical schools, one feels a humiliating sense of inferiority.

The practical question now arises, what can we as an organization do to hasten the dawn of a better era? No doubt evolution and the survival of the fittest will in the end bring order out of chaos; but we believe in the capacity of individuals to measurably direct and hasten this desirable process. We have a noble example set us in the person of the Secretary of the Illinois State Board of Health. It will not be enough to enact stringent medical laws in our various States, however much that is needed as a preliminary step; we must, in addition, have men to watch over and insist on the rigid enforcement of adequate laws with all the indefatigable zeal of which so rare an example has been afforded us.

MEDICAL PROGRESS.

A NEW METHOD OF MERCURIAL TREATMENT. —G. GAERTNER and S. EHRMANN, of the Medical Faculty of the University of Vienna, report their experience in the application of mercury by means of an electrical bath. For this purpose a bathing tub was constructed with two compartments, one above the other, separated by a diaphragm. The diaphragm adapts itself almost hermetically to the human body. The walls and floor of the tub are covered with electrodes (plates of copper or zinc) which are covered by perforated wood. The covering of one of the compartments is placed in contact with the positive pole; that of the other with the negative pole of the battery. Between the two compartments there is no other communication than that of the human body, the diaphragm being constructed of an insulating substance and the water of the two compartments only communicating by openings almost capillary in size, and hence the resistance here offered is so great compared with that of the human body that the amount of current which passes through the water may be disregarded. It may then be apparent that almost all the current, the intensity of which is measured by the galvanometer, passes through the body, and this indeed has been confirmed by exact measurement.

The advantages of this double bath are the following:

1. The strength of the current is equal in all parts of the skin immersed in the water.

2. Weak or strong currents may be used.

3. One is able to measure exactly the intensity of the current passed through the body.

The authors have lately made use of this bath as a means of introducing certain remedies, particularly sublimate, into the system. The arrangement is so convenient that first one half of the body and then the other may be submitted to the action of the positive electrode. As an example of what has been accomplished in this manner the authors cite several cases, among them the following: A slender young man who had never been subjected to mercurial treatment was placed in the electric bath, the lower positive compartment of which contained 4 grm. of sublimate. The intensity of the current employed was 100 milliampères, the duration of the bath fifteen minutes. In the first twenty-four hours following the bath the urine contained considerable mercury; on the fourth day it amounted to 7 milligrams.

In all the experiments made the skin of the patients was absolutely intact, a fact easily ascertained, inasmuch as the least excoriation is manifested in the electric bath by a lively sensation of heat. It is beyond doubt that the mercury was introduced into the system by other means than by simple absorption. Furthermore, it is to be remarked that mercury appeared in the urine upon the day of the bath, proving that it quickly reached the vascular part of the integument. The advantages claimed for this method of treatment are:

1. The mercury is introduced through the skin as in the methods of injection and inunction, whereby accumulation in the digestive canal and liver is avoided.
2. Almost the entire cutaneous surface is subjected to the action of the mercury, and it is possible that it exerts a local action upon the germs contained in the skin.
3. The quantity of mercury introduced is proportionate to the intensity and duration of the current, thus permitting an exact measurement of the amount of the medicament absorbed.
4. The method is painless, cleanly and unattended by danger.

The authors have undertaken a series of therapeutical experiments including the application of iron by this method.—*L'Electrothérapie.*

COMPRESSION OF THE THORAX IN PLEURISY.—Clinicians differ materially in opinion regarding the real cause of the pain of pleurisy. Friction of the inflamed surfaces of the pleura does not account for all cases, and some are of the opinion that it is explained by an involvement of the intercostal nerves. It is well known that patients seek to relieve themselves by changes of position, some finding ease by assuming a decubitus upon the affected side, while others prefer the dorsal position, and others, still, choose to lie upon the healthy side. R. Roth has experimented with the mechanical treatment of pleuritic pain, and has found that bandaging of the thorax is very agreeable to the patient. He employs a bandage of cotton 6–7 cm. wide, with which he envelops the thorax during expiration. In some cases it appears as though the bandage exerted a positive curative effect. In some cases, where the circular bandage is not well borne, relief may be obtained by covering the affected half of the thorax, during expiration, with broad strips of rubber adhesive plaster, which prevent too great distension of the thorax on that side.—*Corres.-Bl. für Schw. Aerzte.*

RARE TUMORS OF THE BREAST.—DR. DUDLEY P. ALLEN, of Cleveland, reports a case of carcinoma in the breast of a man 50 years of age. The right side was first affected, but at present there is a line of nodules extending across to the opposite side. The left nipple is retracted. The right breast is the seat of a phagedenic ulcer of large size. The glands of the left axilla are enlarged. Tissue removed from the indurated border of the ulcerating surface presents, upon microscopical examination, the most typical appearance of carcinoma.

The second case was that of a chronic ulcer of the breast in a woman. The external appearances were those of carcinoma. An operation for the removal of the supposed cancer was begun, when an escape of pus revealed the true character of the cases.—*Medical News*, Sept. 14, 1889.

THE TREATMENT OF UTERINE FIBROIDS BY ELECTRICITY.—DR. L. DANION, in a communication to the Congrès de Chirurgie, draws attention to the dangers attending the electrical treatment of uterine fibroids. He has collected four cases in which cysts were mistaken for fibroids, and death resulted from the treatment. He refers to other fatalities occurring in his own practice as well as in the practice of others, not excepting Apostoli, and quotes the opinions of English and American surgeons as to the danger of the treatment. The electrical treatment, in his opinion, however, has become dangerous only because it has included certain useless practices. His conclusions are as follows: The electrical treatment of fibroids should be in the hands of electro-therapeutists, for they alone are able to accomplish, with electricity, all the service which it is capable of rendering. An exact diagnosis is necessary; in case of doubt advice should be sought from an able surgeon. When the indication for the treatment has been established, the intra-uterine electro-caustic application should never be made, as it is useless and dangerous unless the object be a positive caustic action in the case of a well-determined lesion of the uterine mucosa, in which circumstance it is better to dilate when with patience the application of electricity alone will often be sufficient. Do not make punctures, for they are useless and dangerous. If the cervix is accessible, apply an electrode with a small surface and one that cauterizes laterally always at one and the same point. A current of from 50 to 80 milliampères is sufficient. If the cervix is inaccessible, apply the method with the electrical *tampon* (a *tampon* covered with a sheet of caoutchouc except at its extremity). By this method a current of from 120 to 130 milliampères can readily be employed. Do not forget to reverse the current. If phenomena of excitation or congestion are witnessed, moderate the intensity of the current, especially that of the reversed current. Proceeding in this manner, one can readily obtain, without pain or accident, the best results that can be expected from electro-therapy, such, indeed, as will often surpass one's expectations.—*L'Electrothérapie.*

SACCHARIN IN COMMERCE.—The Public Sanitary Council of Hungary, by direction of the Government, has promulgated the following judgment respecting the use of saccharin: It is necessary and desirable that saccharin be excluded from commerce as a food or luxury, and for the following reasons:

1. Because it is not sugar, although by reason of its name and taste it may be made to pass with the public for sugar.
2. Because it possesses no nutritive properties, its physiological value as a food being *nil* in comparison with sugar.
3. Because its prolonged use leads to digestive disturbances.
4. Because its cheapness may lead to its substitution for sugar, as has occurred in other countries.

There is, however, no objection to its being prescribed as a medicine.

In Italy the manufacture and importation of saccharin has already been forbidden by ministerial decree, and its therapeutical application regulated by various limitations.

It is surprising that at the Paris exposition saccharin should have received the award of a gold medal.—*Corres.-Bl. für Schw. Aertze.*

EXALGINE.—In a discussion on exalgine in the Congrès International de Thérapeutique, M. BARDET reported on the results obtained in the Hôpital Cochin. From an examination of seventy-five observations he concluded that exalgine possesses remarkable analgesic powers, particularly in congestive and dental neuralgias and in congestive migraines with pain above and below the orbits. He found it important, however, to employ real exalgine; that is to say, the *methylacetanilide* which melts at 101°, because the isomers do not possess the same properties. Thus in England there is a product sold under the name of exalgine which is *aceto-orthotoluid*, 'a very different substance in a therapeutic sense, as it is inactive, while even in the dose of 0.40 centigr. exalgine produces marked effects.

M. Féréol said that he had not obtained results equally favorable with those reported by M. Bardet; he had often been obliged to discontinue the remedy without having relieved pain, and in some cases he had observed cyanosis from its use. He prescribed it in the amount of 0.50 centigr. per day.

M. Desnos said that if the previous speaker had not obtained desirable results from the use of exalgine it was because the dose employed was too small. He himself administered as much as 1.50 grm. in twenty-four hours and had secured relief in very severe cases of neuralgia; he had, however, also observed cyanosis from its use.

M. Dujardin-Beaumetz summarized the advantages and disadvantages in the use of the remedy. On the one hand, in many cases it removes pain and relieves obstinate neuralgias; on the other hand, when one is obliged to employ a large dose and continue the use of the remedy for some time, phenomena of vertigo make their appearance, and although these are unattended by danger, they require attention; furthermore, exalgine is insoluble. Exalgine in his opinion is a useful agent, but is inferior to antipyrin.—*Le Bul. Médical.*

GANGRENE OF THE INTESTINE FROM THROMBOSIS.—PINNER reports the case of a strong, healthy man, aged 50 years, who was suddenly seized with symptoms of an acute gastro-intestinal catarrh, accompanied with vomiting and purging. The diarrhœa ceased after a little, but the vomiting continued whenever food was taken. On the third day symptoms of collapse appeared, with subnormal temperature, tenesmus and a slight discharge of fluid blood. Death occurred on the fifth day. The autopsy revealed thrombosis of the inferior mesenteric artery where it is given off from the aorta; hæmorrhagic necrosis in the colon, especially in the cæcum, but to a moderate degree in the hepatic and splenic flexure; the sigmoid flexure and rectum free; moderate peritonitis.—*Centr. für Chirurgie.*

BILLROTH ON THE TECHNIQUE OF RESECTION OF THE INTESTINE.—At the last meeting of the Versammlung Deutscher Naturforscher ŭ Arzte, VON EISELSBERG remarked, in reference to resection of the cæcum, that Billroth, after several unfortunate results in his cases, had resorted to a new method of operating. He found, indeed, that when it became necessary to unite the lower end of the ileum with a transverse section of the ascending colon an angular union sometimes formed, as a result of which in two cases there was complete stenosis of the gut. Billroth, therefore, closes up the lower end of the colon entirely and, making a longitudinal incision higher up, joins the ileum at this point, and with the best results, for by this plan the natural relations are preserved, the ileum being at right angles to the colon.

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SATURDAY, FEBRUARY 22, 1890.

PRECISION IN DIAGNOSIS.

The power to correctly interpret the manifestations of disease is above every other a prerequisite to the successful practice of medicine. During the last fifty, and more especially during the last twenty-five years, the means of investigation have been so improved, and the advances in the study of pathology have been such, that former and even present methods of teaching must of necessity be greatly modified.

Never before were there such possibilities presented for the attainment of correct conclusions as to pathological conditions, and never as now were men able to make such critical studies, both of the causes and of the manifestations of disease. No longer may medical men simulate the blind giant who went beating about, and killing whatsoever he chanced to hit. The physician's better directed blow should fell the disease and not the man.

To the careful study of pathological conditions and to the correct interpretation of their manifestations, are we most indebted for the wonderful advances which have recently been made in medicine, and along these same lines lie the pathways of successful progress in the future, and no student may hope for permanent success in his profession, who does not bend his energies to the attainment of the best methods as they are being placed at his command of investigating diseases. Simple didactic instruction was well in its time, and it served its purpose, but its day is well-nigh past, and its methods must give place to others that are better. It is self-evident that the medical schools best equipped in the matter of chemical and physiological laboratories—those which offer the most approved facilities for microscopical investigations, and who mostly train their students at the bedsides of patients in the hospitals, are to be the successful schools of the future, and that those who fail in these respects will assuredly, as they should, go to the wall.

But our present purpose is not so much to indicate methods of teaching, or to urge upon students the necessity of thoroughly utilizing the best means of instruction, as it is to impress upon the minds of medical men already in the field the absolute necessity of making their individual cases matters of critical study, and of habitually training themselves to the attainment of utmost skill in medical and surgical diagnosis.

Medicine to-day is not so much in peril at the hands of any outward foes as it is from wounds inflicted in the house of its friends; and to attempt the practice of the healing art, without due preliminary preparation coupled with the most considerate study of cases to be treated, is not simply a misdemeanor, but a crime.

In these days of inconsiderate haste, the danger with medical men is imminent that they imbibe the same spirit and fail to exercise due diligence and patience in the study of their cases—that they shall fail of precision in diagnosis and. as a necessary result, grow reckless in their methods of prescribing.

The danger is that, by reason of failure to apply themselves diligently to the study of diseased conditions, and to the exercise of critical methods of examination and the attainment of definite conclusions, physicians shall begin to retrograde from the day of their graduation until they help to swell the vast throng which gives hindrance rather than help in the onward progress of the healing art.

We doubt if there be a single man that reads this article, who is fully satisfied with his own habits in these respects. We doubt if any of our practitioners have achieved their ideals of success in medical diagnosis, We are constantly working along the border line, uncertain of what may be discovered and of that which is unknowable.

Much that was deemed beyond our grasp is now within control. New facts are coming to the light which have important bearings upon the interpretation of diseases and upon the practice of the healing art, and there should be no students in our profession so diligent as those to be found among our graduated physicians. The literature of the day, replete with the experiences of other men, is at the one hand, and the sick and the suffering, with all their vital expressions of medical truths, are on the other, and only he who, walking in the midst of these, can thoroughly utilize their teachings for the good of men, has right to the path wherein he treads.

The paramount condition to successful medical practice must ever be that of precision in diagnosis. It is in some sense a gift, as are the powers of critical and correct discernment; but nevertheless it is largely a matter of education, and its rewards only come to those who are the patient, vigilant, tireless students of diseases in all their various manifestations. Let the diagnosis be clearly formulated before any prescription is made.

SANITARIA FOR THE CONSUMPTIVE POOR.

The curability of pulmonary tuberculosis is an established fact. Yet so small is the percentage of cases in which this fortunate result is attained that one may be excused for taking a pessimistic view of the disease in general, particularly when he contemplates the consumptive poor of our large cities. JACCOUD has set forth admirably the conditions favoring a successful management of this destroyer, and if one will study these he can not but be impressed with the utter hopelessness of their attainment by the poor. Climatic treatment plays such an important rôle that even consumptives whose means enable them to command every resource may be said to wage a hopeless fight if they remain in their city homes. What, then, awaits the patient who depends for existence on his daily labor, or that of brother or sister earning but a few dollars a week? Even when he can afford the attendance of a family physician his outlook is cheerless. The weapons which the skill of the pharmacist has placed at his command are costly. He can ill afford to procure the various forms of concentrated nourishment and the preparations calculated to aid his disordered digestion, and in most instances has to do without them. Then his circumstances deprive him of proper nursing, so that, as a rule, his fight is a losing one. Think, then, of that still more unfortunate consumptive who frequents the dispensary or outdoor department of some hospital. If taken in hand in the incipiency of his disease, and he be able to procure and assimilate sufficient nourishment, then, by the judicious use of tonics, hypophosphites, cod-liver oil, creosote, etc., there may be hope of arresting the mischief. If, on the contrary, he be far along, with a racking cough, hectic, night-sweats, anorexia and, perchance, diarrhœa, there can be but small chance of obtaining more than euthanasia. His home environment is generally against him, and the whole condition of his life such as counteracts the benefit of the most wisely directed treatment. Such a case is truly pathetic, and compels pity from even the stony-hearted.

It is for such sufferers who die by thousands in our great cities, that the plea is made for the sanitaria or hospitals devoted to the care of the consumptive poor. There are many, though perhaps not enough hospitals for the reception of surgical cases and cases of acute non-infectious disease, but there is a dearth of institutions of the kind herein meant where phthisical patients can be received and kept until death or recovery ensues. Four reasons suggest themselves for the speedy establishment of such infirmaries.

1. It is an eminently deserving charity that should appeal to the benevolence of the charitable.

2. Prolonged residence in such a resort affords for the consumptive poor the best, it might almost be said, the only chance of successfully combatting this disease. A phthisical patient should have every act of his life, every breath he draws or mouthful of food he eats, his exercise, his rest, in a word all his habits regulated by a skilled physician. And only in a well conducted institution can he be thus managed. Of the encouraging results that can be accomplished by such sanitaria witness those of Europe, notably Goebersdorf and Frankinstein in the inclement climate of Germany.

3. If there be anything in the theory of communicability of tuberculosis, then every consumptive who dwells in our crowded and unsanitary tenement houses is a source of contagion. And since it is out of the question to stamp out the disease by summary means, such measures for isolation and treatment as can be taken are incumbent on the State as a means of prophylaxis.

4. Although experimentation upon such pa-

tients would not be the aim of such an institution, still there would be afforded excellent opportunities for the trial of remedies and methods of treatment that promise well and if not successful are at least devoid of harm. In such ways humanity might be greatly benefitted.

Such are some of the considerations that commend these institutions to the humane and public-spirited.

Physicians wield great influence in the State, and they have better occasion than the laity to appreciate the evils of this widespread destroyer. Therefore it is to be hoped that their influence will be exerted in their respective communities for the establishment of such sanitaria.

EXAMINATIONS FOR APPOINTMENT IN THE UNITED STATES ARMY.

We publish elsewhere in the present number of THE JOURNAL a notice of the meeting of an Army Medical Board, which will be convened during the month of May next in the city of New York, for the examination of candidates for appointment in the medical corps of the United States army; and in order that those who purpose to make applications for such examinations may be fully advised with reference to the medical department and the requisites essential to appointment therein, we append a circular of information prepared by Surgeon-General Moore, which very fully conveys the needed information.

Of many things we, as Americans, have reason to be proud, but we cannot boast of large standing armies. The patriotism that burns in the breast of every true American is our best guaranty of protection to every American interest. At peace among ourselves and in accord with our environments, we have no need to lay upon ourselves those burdens of taxation which must be incident to the maintenance of vast military organizations. No emergencies can rise in the future greater than those which have arisen in the past; and the fact has been demonstrated, as we profoundly hope may never again be needful, that when a crisis shall demand, armies fully equipped in every detail can be summoned at once to the field, and that their medical department can be as quickly developed to any needed extent; hence the present demand is limited.

The records of our medical officers in the past have commanded a world-wide respect, and such is their present repute that positions in the Medical Department were never more inviting than now.

The conditions essential to success are such that any applicant may esteem himself specially honored if he shall attain to an appointment in the medical corps, and we heartily commend this notice to the attention of aspiring young men.

EDITORIAL NOTES.

HOME.

MEDICAL DIRECTOR HUDSON, U. S. N.—The death of Medical Director Adrian Hudson, M.D., U. S. N., has been announced to the department at Washington as having occurred February 7th at Mare Island Hospital, California, at the age of 53 years. He was sick only five days, his attack beginning as influenza and eventuating in pneumonia of an intractable type.

THE AMERICAN PHYSIQUE.—Dr. J. B. Hamilton, of the Marine Hospital Service, is quoted by the Boston *Medical and Surgical Journal* as deprecating the slight attention paid in this country to a proper development of the physique. In an address before the Georgetown Medical College on "Ancient and Modern Physical Culture," he illustrated his subject by an estimate that not one-third of our population of the military age would be able to pass the physical examination of the recruit.

ACADEMY OF MEDICINE, NEW YORK.—Dr. Francis Delafield, recently elected to the chair of the Section on the Theory and Practice of Medicine in the Academy of Medicine, made his inaugural contribution in the form of a summary of his experience with pneumonia in epidemic influenza. He holds that four grades of pulmonary inflammation may be defined. There is a light grade, requiring almost no treatment, and a severe kind, which resists every treatment. Between these two others appear, generally having marked bronchitic symptoms, but differing in gravity by reason of the amount of consolidation which takes place in the graver of the two types, and by reason of the prolonged period of resolution in the solidified areas.

THE LATE PROFESSOR MILLER.—In the death of Dr. Edward Miller, of Louisville, a bright light is early extinguished. Although only 48 years of age, he had attained to the position of Professor of Surgery in the Louisville Medical College, as well as to the editorship of the *Medical Herald.* He was the son of the late Dr. Henry Miller, President of the Association in 1859. The cause of his death has been ascribed to cardiac failure supervening upon an attack of epidemic influenza; the date of his demise was January 20th. *The American Practitioner*, writing in generous vein, says of Dr. Miller: "He was a man of uncommon talent and large learning, whose death vacates a place in the ranks of medical practice, education and journalism which it will be difficult to fill."

THE ILLUSTRIOUS DEAD.—At the recent Lincoln anniversary dinner held in Brooklyn, in answer to the sentiment, "Lincoln and his chosen State," Surgeon-General Hamilton paid a brief but eloquent tribute to the names and memories of Lincoln, Douglas and Logan, closing with these words: "Lincoln lies buried near the shores of the Sangamon; Douglass, by the limpid lake; Logan's dust will shortly be borne to its last resting-place near his favorite city, in soil made sacred by the memory of its illustrious dead; and for ages to come it may seem to the living that the sighing winds, passing from their resting-place on the lake to his on the beautiful river, are carrying tender messages of sympathy and love."

FOREIGN.

A LARGE FIELD FOR FEMALE PRACTITIONERS.—Two American lady-physicians have made a marked impression in China. One of them by her aptitude for surgery has astonished them: she resides at Shanghai, but the name is not given in the telegram which has come to us by

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CHINESE.—Another
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rudely done. This work will undoubtedly be a great help to those who are engaged in infusing the new education in the high official circles of that Empire. It may even be one of the means of hastening the downfall of the antiquated methods that have so long resisted the medical reforms coming from abroad.

PERILS OF FOOTBALL.—A recent number of the London *Lancet* had a list of seven casualties reported to it during the previous week from various parts of England. One of these was attended by a fatal result, and one of the correspondents remarked inquiringly if it would not be expedient to revive the enactment of the Scottish King James, who in 1524 decreed fifty shillings fine against any person who should be caught playing football.

PROF. E. LEYDEN.—Almost a quarter of a century has elapsed since Prof. E. Leyden was appointed director of the medical clinic in Königsberg. His pupils therefore have prepared to celebrate this event on the 6th of April, the intention being to present him with a memorial address and an album of photographs, as well as to erect a bust of the professor.

MEDICO-NAUTICAL SCHOOL.—The French minister of marine has introduced a plan for the establishment of a medico-nautical school in some city where there is already a State faculty. This school is to be connected with the schools in the ports of Brest. Rochefort, and Toulon. Since 1828 the marine sanitary corps has been reorganized eight times. Three cities are now contesting their claims to the honor of obtaining the school in question.

SPANISH GYNECOLOGICAL SOCIETY.—At the opening session of the Spanish Gynecological Society for 1889-90. Dr. E. Verdonces read a paper entitled "Some reflections tending to prove that the confidence inspired by our knowledge of anæsthesia and the employment of modern antiseptic methods does not justify or exonerate us in practicing the operations, often performed at the present day, of laparotomy, and especially so-called exploratory laparotomy."

THE LONDON MEDICAL RECORDER states that methyl-benzo-sulphinic acid has sweetening p
erties many times superior to saccharin. Li
too, the new drug has disinfectant properties.

TOPICS OF THE WEEK.

THE BACTERIOLOGY OF INFLUENZA.

We have now before us the original preliminary communication[1] by Dr. Maximilian Jolles, the reputed discoverer of the microbe of influenza, and well might we exclaim: "Parturiunt montes, nascitur ridiculus mus!" After all, the dust raised about the discovery of the microbe of influenza vanishes into air on perusing the statements made by the discoverer himself.

Dr. Maximilian Jolles is the co-proprietor of a private "chemico-microscopic laboratory," evidently devoted to the examination, chemical and microscopic, of sputa, urine, etc., sent for the purpose of diagnosis by medical men. The work on influenza was, therefore, not carried out in the Vienna Bactoriological Institute, and was not superintended by Professor Weichselbaum. In justice to Dr. Jolles, it ought to be stated, however, that he himself protests against being forced, by the untimely and exaggerated accounts given by the daily papers, to publish a preliminary abstract of his observations, these being as yet far from concluded, and therefore not allowing any definite conclusion to be drawn from them.

In examining sputa from patients who had previously suffered from influenza, he was repeatedly struck by the presence of numerous capsulated cocci, resembling Friedländer's so-called pneumonia bacillus, Although aware that other reliable observers had demonstrated the presence of this microbe in normal sputum and in various normal fluids, yet Dr. Jolles insists on the fact that in the specimens of sputa sent to him the bacillus of Friedländer was present in considerable numbers, though he also adds that other bacteria—bacilli, pus cocci, and streptococci—could be demonstrated.

By culture on gelatine Dr. Jolles isolated the capsulated microbes, and ascertained that, both as regards the manner in which they stain with different dyes and as to their cultural characters, they resemble Friedländer's microbe. He found the same capsulated cocci in the urine of a patient suffering from acute purulent cystitis, and also on one occasion on which Vienna drinking water was subjected to bacteriological examination he found in it also, besides various other species of bacteria, this particular species of capsulated coccus. Lastly, two rabbits were inoculated with the cultures; one of them showed no result, the other died on the fifth day from septicæmia.

These are all the facts observed by Dr. Jolles, and it must be clear that of the discovery of the microbe of influenza there is really very little evidence, if any. In the first place, the assumption made by Dr. Jolles that Friedländer's bacillus has a causal relation to pneumonia has been, as far as croupous pneumonia is concerned (and it is for this pneumonia that its etiological importance had been asserted by Friedländer and others), abundantly disproved, since this microbe is present in various conditions in no way related to pneumonia, for example normal sputum, the normal fluid of the mouth, etc.

In the second place, Dr. Jolles' argument that because in some cases of influenza one kind or another of pneumonia supervenes on the primary attack, one of the species of microbes present in the sputum of such pneumonia might be, and probably is, the microbe of influenza, is faulty in logic as well as in fact. We have already pointed out, in the last number of this journal, that the pneumonia following some cases of influenza is not of a uniform character, and is evidently a secondary complication; and, therefore, the microbe, even if proved to be the cause of this pneumonia, need not necessarily be the organism of the primary disease, that is, of the influenza. The demonstration of the microbe in a sufficient number of cases of influenza during the early stages of the disease must be the very first and preliminary step. This, however, has not been taken.

To all those interested in the discovery of the nature and causes of epidemic diseases—and none can and ought to be more so than the general public—the publication of incorrect, misleading and exaggerated accounts such as were telegraphed on the subject of the discovery of the microbe of influenza from Vienna, and appeared in Vienna, London and elsewhere, must always remain a regrettable incident.—*British Medical Journal,* Feb. 1.

MEDICAL PRACTITIONERS' MEALS.

Moderation and regularity probably form the concluding words of most of the elaborate directions so often expected by patients and given by their medical attendants. This is the theme which is repeated again and again, with slight variations; the quantity or the variety of alcohol may be indicated, the use of pickles and heating ingredients deprecated, and the kind of vegetable, cooked or fresh, may give a short respite to the monotony; but the theme is bound to assert itself afresh, and to come in with tremendous force at the close of the oration, so that the patient leaves, humming the refrain, "moderation and regularity," as though the words had never been heard before, and possessed a talismanic power which it had been left for the wisdom of the nineteenth century to disclose. But, joking apart, it may be worth inquiring how far the medical profession furnishes living examples of the truth of the doctrine. Upon general lines all are agreed, even though some may seek to widen the scope and intention of the words by adding significantly, "In fact, temperance in all things." When the question is pressed more closely, however, it will be found that the rush of work, the exacting demands of patients, and keen competition, do not allow many in general practice to follow out the second half of the lesson. It is more particularly the younger men who suffer from want of regularity, those who fear the consequences of delay when an urgent message has been received. From a health point of view it is sufficiently lamentable to find that they often have not time for their meals, but surely they are acting upon a mistaken notion of their duties to their patients. A tired brain, exhausted from want of food, is not best fitted to cope with the serious problems so often set before it. Surgeons understand the monetary value of moderation and regularity, so that their punctuality in all matters becomes proverbial; but t family medical attendant sometimes seems to consider himself privileged to be a little late, on account of his numerous engagements. Is it too much to hint that, for his own sake as well as for his patients', one engagement, his dinner hour, should be kept with greater regularity? Many practitioners are at work for longer hours than railway signalmen, for whom so much proper sympathy is felt in the event of a catastrophe. If the public could realize that it is unreasonable to expect good advice from a tired and hungry medical man, fewer exacting messages would be sent, to the advantage of all concerned.—*The Lancet.*

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[1] Wiener medizin, Blätter, No. 4, xiii.

RECENT SIGNATURES TO MEDICAL DECLARATIONS ON ALCOHOL.

Three leading declarations on the subject of intoxicants have been published, with the signatures of many leading members of the medical profession. The first of these was issued in 1839, and was to the effect that intoxicating liquors were unnecessary in health in any quantity, while excessive quantities were injurious. This was signed by, among others, Sir Benjamin Brodie, Sir James Clark and Dr. Marshall Hall. The second declaration appeared in 1847, and was mainly to the effect that perfect health was compatible with abstinence from all intoxicants, which might safely be discontinued at once or gradually, and that universal abstinence would conduce to the health, prosperity, morality and happiness of the human race. Sir John Forbes, Sir Risdon Bennett, Sir J. McGregor, Sir B. Brodie, and 2,000 other well known physicians and surgeons appended their names. The third declaration appeared in 1871, Mr. Ernest Hart and Dr. Parkes having initiated it. It was designed to call attention to the inconsiderate prescription of large quantities of alcoholic drinks in disease as a grave danger, and to suggest a careful prescription, as in the case of a powerful drug, for the occasion only. This was largely and influentially-signed by consulting and hospital physicians and surgeons. Within the last year and a half the British Medical Temperance Association has secured 622 additional signatures. Of this number no fewer than 561 have been affixed to all three manifestoes. Among the names appended to the last document are those of Prof. McKendrick and Sir George Macleod, of Glasgow, Prof. Simpson, of Edinburgh, Sir Henry Pitman and Dr. W. S. Playfair. Among the signatories to one or other of the declarations have also been Dr. Bristowe, Dr. Matthews Duncan, Sir George Paget and Dr. Bridges (of the Local Government Board). Such a body of testimony from the medical profession is the best answer to the aspersion so frequently indulged in by irresponsible agitators that medical men are generally opposed to the temperance reformation. This great and growing movement has no truer friends than the many within the ranks of the medical profession.—*British Med. Journal.*

THE EPIDEMIC OF INFLUENZA.

Those who have followed the character and spread of the present epidemic on the Continent and in this country must no doubt have come to the conclusion that, like other epidemic diseases, influenza is spread by contagium, and must be due to a living organism, a microbe. The discovery of this has been announced from Vienna. Some of the daily papers, on Wednesday of this week, brought the news that the microbe of influenza has been identified by Drs. Maximilian and Jolles, working in the Vienna Bacteriological Laboratory under Professor Weichselbaum. It is stated briefly that this microbe is similar to, but not identical with, the microbe of croupous pneumonia. Many of the readers of the *Journal* are aware that Weichselbaum had, independently of Fränkel, of Berlin, shown that genuine croupous or fibrinous pneumonia is due, not to the bacillus of Friedländer, but to a capsulated diplococcus—the diplococcus pneumoniæ—having special morphological and cultural characters. The discovery of the influenza microbe, coming from such a distinguished and reliable source, deserves in itself careful attention, and this is enhanced by the fact that in the influenza of the present epidemic both on the Continent and in this country, some kind of pulmonary distemper is one of the conspicuous symptoms; and this, though generally mild and of the character of a slight bronchial catarrh, has yet proved fatal in a certain percentage of cases terminating as severe pneumonia. On the other hand, it is necessary to bear in mind that in these fatal cases the pneumonia is not of the same nature in all cases; the *post-mortem* examination shows it to be in some instances of the character of severe catarrhal or broncho-pneumonia, while in others it is more of the nature of fibrinous pneumonia. Further, it is to be remembered that, except in these fatal cases, the disease itself in its course and symptoms has no more similarity to croupous pneumonia than to typhoid fever, and that the pneumonia, when present, is always of the nature of a secondary complication, supervening on previous pulmonary weakness (age, previous disease, or a chill caught during convalescence from the primary influenza). It is, however, premature to make any further remarks about the matter until all the details concerning the microbe and the evidence as to its claims to be regarded as the microbe of influenza are made known.—*Brit. Med. Jour.*

ABDOMINAL SECTION.

The *Weekly Medical Review*, December 28, 1889, publishes a paper which was read by Dr. L. S. McMurtry, of Danville, Ky., at the meeting of the Southern Surgical and Gynecological Society November 13, 1889, at Nashville, with a tabulated report of cases. In connection with many valuable and practical suggestions, he closes the article with the following words:

Increasing experience has impressed me more and more with the difficulties of abdominal work, and makes me less confident of often meeting with simple cases. In conclusion I desire to make an earnest plea for earlier interference in abdominal diseases. What Bantock has done in England by his little work entitled "A Plea for Early Ovariotomy," we need to do in our own country. When operations are done in good time, before emaciation and exhaustion come on, and before repeated attacks of peritonitis have complicated comparatively easy tasks for the surgeon, then will our results excel even the brilliant record of the present time.

PRACTICAL NOTES.

THE USE OF ANÆSTHETICS IN NATURAL LABOR.

Obstetric anæsthesia is quite different from surgical anæsthesia, the latter being indicated for all obstetrical operations. Obstetric anæsthesia may be general or local. For the former are used ether, chloroform, chloral, and a variety of mixtures, including the bromide of ethyl and the protoxide of nitrogen. Chloral can hardly be considered as a general anæsthetic in the same sense as ether and chloroform. An injection of three or four grammes of chloral in solution given during the period of dilatation, and repeated perhaps in four or five hours, will often prove of the greatest benefit and comfort to the patient, regulating the pains, moderating the suffering of the patient, and abbreviating the duration of labor. In the latter part of labor chloral is less useful than chloroform, this substance being now almost universally used in parturition. When it is employed only in the first stage of anæsthesia no particular influence is exerted upon the contractions. If it is pushed to the second stage the contractions are retarded, but soon resume their normal rhythm. In the third stage of chloroform anæsthesia the contractions are diminished, or may cease altogether. This is a stage of danger, for not only the uterus but the heart and other muscular organs may be paralyzed. The fœtus experiences very little of the effect of the chloroform. The author's experience is summed up in the following propositions:

1. Chlororm given in small doses produces a condition of physical and moral calm in the patient.

2. If the inhalations are prolonged for a considerable time, the result will usually be an attenuation of the uterine pain. The perceptions of the patient become less keen and the uterine contractions are slower.

3. If the period of complete anæsthesia is reached with analgesia there is surgical and not obstetrical anæsthesia.

4. In some cases chloroform excites instead of calming, and in such cases its use should be discontinued.

5. In some cases chloroform has unquestionably diminished the retractability of the uterus, and has thus been the cause of more or less severe hæmorrhage after labor.

6. Chloroform has no action upon the fœtus.

7. Chloroform given during the period of expulsion has a less decided effect upon the contractions of the abdominal muscles and the resistance of the perineum than is generally supposed. The sensation of pain at that period is not entirely abolished, the contractions are frequent, and Charpentier has failed to notice that which has been called by Campbell dissociation of the sensations of touch and pain.

Chloroform is especially indicated—

1. In primiparæ who are nervous and excitable, and in whom the pain may even cause delirium; also in those with whom the labor is greatly prolonged, thus becoming a source of danger.

2. In all cases in which there is a spasm, contraction, or rigidity of the back of the neck or body of the uterus. Contra-indications are the absence of severe suffering, the existence of placenta prævia, general prostration, disease of the circulatory or respiratory organs, cerebral disease, alcoholism, etc.

During the period of dilatation chloroform is most required, but only to the extent of obstetric anæsthesia, as a rule. It sometimes gives rise to nausea, vomiting, headache, and various nervous troubles. Hæmorrhage is not likely to result unless the anæsthesia is profound. Chloroform can not cause convulsions; on the contrary, it is one of the best means for relieving them. It may also be useful in warding off puerperal mania from those patients in whom the intense pain of parturition might lead to such a result. Dutertre has found reports of forty cases of sudden death during labor attributable to chloroform, but of that number thirteen should be eliminated as irrelevant. Of the others, some had cardiac or pulmonary disease, some suffered from alcoholism, and in the others narcosis was too profound. A first condition in the use of chloroform is that it be chemically pure; death from respiratory syncope may follow the use of an impure article: Small quantities should be given, the patient being in the horizontal position, and there should be an interval between successive inhalations.

Subcutaneous injections of antipyrine, twenty-five centigrammes at a dose, have been used in a number of cases to produce obstetric anæsthesia. Chiari and Guéniot report good results from its use. Various mixtures have been suggested, in most of which ether, chloroform, or chloral is an element. Doléris has advised the local use of a five-per-cent. solution of cocaine muriate to mitigate the pain of labor, but the author expresses his views upon the subject as follows.

1. Nothing can be applied to relieve the pain caused by the distension of the lower segment of the uterus which causes the pain felt during the contractions.

2. Applications of cocaine may give relief if they reach the nerve endings of the supravaginal and infravaginal portions of the cervix and the nerves of the vagina. Thus the pain of *dilatation* may be modified.

3. For the pain produced by compression of the nerve trunks of the pelvis no local application will avail.

4. The pain in the vulva and vaginal mucous membrane during expulsion may be somewhat modified by local applications.

As to the value of hypnotism in parturition it must have a limited range. Of thirteen cases in which it was tried, it was successful in only four, the patients all being of a hysterical temperament.—Charpentier, *Bull. et mém. de la soc. obst. de Paris*, 1889, No. 5.—*N. Y. Med. Jour.*

SOCIETY PROCEEDINGS.

Pittsburgh Obstetrical Society.

Regular Meeting, November 7, 1889.

R. Stansbury Sutton, M.D., President, in the Chair.

Dr. J. J. Green, of Pittsburgh, presented the following paper:

FACE PRESENTATIONS.

We understand by a face presentation that the chin is extended, that the occiput is reflected against the neck, and the face with the frontal portion of the skull occupies, or has a great tendency to occupy the pelvic entrance. This condition does not occur frequently. Statistics show that among French obstetricians, about one in 250 presents a face. Dr. Churchill, some years ago, found that in British practice, face presentations occurred once in 292 cases.

According to German statistics, it occurs once in 130 cases. If it could be proven that the difference in number really occurs, we might conclude that some difference in the anatomical formation of the pelvis exists, or that the fœtal head among Germans is somewhat less, or may more frequently possess a long occiput.

Face presentations seem to solicit only a cursory mention by many of our writers on obstetrics. We regard the subject of much more importance than seems to be attached to it by many writers. When we review the causes leading to face presentations, and difference of opinion with reference to management of same, it will be noticed that some good authorities recommend one method of procedure, while equally as good advocate manipulation almost directly opposite. One directs version, another non-interference. Doctrines of this character tend largely to confuse the general practitioners — the men who really occupy the front rank among obstetricians, for it is they who wait on the legitimate mothers of families.

Edward L. Partridge asserts that there is no great disparity in the views of obstetricians upon the cause of face presentations. This may be true in a measure; yet it is equally true that scarcely any one writer coincides in a majority of particulars with anyone else.

There seems little dispute about the classes or varieties of face presentations. Anterior, transverse, and the posterior varieties, we think may with propriety include all shades of position as well here as in any other presentation; for a very small difference in the pelvic slopes will sometimes cause a vast modification of a vertex presentation. Any ordinary obstetrician can, after a few hours of impatient waiting, discover some kind of a misfit between the outline of the fœtal head and the beautifully described pelvic planes as set forth by Meigs and Bedford.

Obliquity of the uterus, according to most authors, is believed to be the cause of a very large majority of face presentations, from the fact that in nearly all cases, immediately after the diagnosis of face presentation is confirmed, obliquity of the womb is found to be present. Yet, frequently obliquity of the uterus is *well* marked, and the face does not present. We find recorded a number of face presentations observed during post-mortem examinations, which we think prove very little, the diagnosis not having been made out previous to the death of the mother. If the mother died before the fœtus made its last effort to move, the absence of contractile power of the uterus would permit the child to assume almost any position, and remain there indefinitely. Again, the fœtus might gravitate, regardless of any and all surrounding circumstances, either with tendencies to bring about face presentation or any other head position. It seems reasonable to grant that in case of dead fœtus with head presenting the chin would drop away from the chest. We find all manner of presentations when the child is dead *in utero*, previous to setting in of labor pains. It is in such cases that a large quantity of liquor amnii is usually present, and the membranes usually protrude unobstructed, containing an excess of fluid. The membranes being ruptured, a large quantity of fluid suddenly escapes, thus accounting for a portion of the excess in number of face presentations, when the fœtus dies some time before the beginning of labor. Another cause of face presentations: In dead children there is lack of resistance on the part of the spinal column, when the uterus is conducting the early stage of labor and the fundus pressure cannot be properly centred. In other words, the axis of the fœtus cannot be sustained; the mechanism of labor becomes unnatural, and the result doubtful. We might state that we believe any cause that may lead to the separation of the chin from the chest will lead to a face or brow presentation. This cause may exist in the fœtus itself or in the anatomical formation of the mother's pelvis. The bony or soft parts may be at fault. Ahlfeld ascribes one case to enlargement of the thyroid gland. Increased size of the chest; some unusual looping of the umbilical cord; either too small or too great a quantity of amniotic fluid may give rise to face presentation. The causes may be physiological, pathological, anatomical, and we might safely and truthfully state traumatic or surgical, for not long since I heard a physician say that he believed he converted a crown to a face presentation. Hecker places great stress upon the shape of the child's head. Judging from the appearance of most of the babies that have faced me as an obstetrician, I would be perfectly willing to grant Hecker the full credit of his claim. Some of them were days in getting into human shape. The diagnosis may be very easy for some, but with others the task is a troublesome one. My first case was properly made out after some time. I have always congratulated myself on the case, believing that it was some unusual form of face presentation that never occurred before, and I am very certain I have not made a similar diagnosis since.

By the touch only can the diagnosis be made, and then the membranes must not be thick or largely distended. You must see that everything connected with the case is favorable for an early diagnosis, for in the majority of cases the head remains high and the membranes low, and usually the frontal bone can most easily be touched, and it moves about with such a degree of facility that the obstetrician frequently finds it expedient to remain silent in the presence of the lady in labor and her near relatives. The outline of the face, according to most authorities and all the obstetricians, is the only reliable sign. These, however, are easily determined as soon as the head descends low enough.

The mechanism of labor in face presentations is similar in nearly all respects to that of head in any other position. When the chin presents in either of the lateral positions, descent and rotation, though somewhat delayed, always takes place without interference. It is when rotation of the chin does not take place that the skill of the obstetrician is taxed. That labors have terminated successfully without the rotation of the chin we cannot doubt, when such men as Partridge, Taylor, Tarriere and others report them. But in nearly all cases the results are disastrous.

I have succeeded in rotating the head three times, I think, in all; once in converting a face to a vertex. After repeated efforts the patient was directed to take the knee-chest position. I had not read of placing the patient in this position with a view of converting a face to a vertex, nor can I speak of it in the hands of others, but I accomplished the end without much difficulty by placing my left hand under the abdomen of my patient and introducing the right hand well into the vagina, and by upward pressure I was, with very gentle pressure against the head with index and middle fingers of right hand, enabled to force back the chin and face. I then placed the woman on her left side and in a few minutes the vertex presented. I then ruptured the membranes. The case terminated successfully in a short time.

Dr. Kearns: I never saw but one case of face presentation; it is rarely encountered. I have had cases which were face presentations, but not worthy of mention, inasmuch as they were premature fœtuses and not attended with any difficulty whatever. The one case I had, thirty years ago, I will never forget. I had had but little experience prior to that time. The labor was protracted and very severe; delivery was spontaneous. When I recognized the presentation it was far advanced. I cannot recollect whether the child was dead or living; my memory is at fault: but I know the patient recovered, although it required a vast amount of patience on the part of the attendants, the case being protracted. I am sorry the doctor did not go more fully into the treatment of these cases. His classification of three forms is perhaps practically correct—posterior, right and left. As to the cause of this malpresentation, might it not be automatic? Might not the motions of the child produce it? Might not the fœtus take a somersault and turn around and never be restored? With regard to treatment of cases, their delivery should be left to nature, I think.

Dr. Blume: I was much pleased with Dr. Green's paper. As he says, face presentation has often been the subject of discussion among obstetricians, and yet there is still a diversity of opinion as to its etiology and treatment. The doctor gave some causes which may produce this presentation. Wincle states that there are thirty-three theories on the etiology of this presentation. I do not intend to dwell on these; I wish to make a few remarks on the treatment. Since Boer, in 1791, first clearly described the mechanism of face presentation, and showed that the chin always rotates to the front, no matter in what diameter the face presents at the pelvic inlet, an expectant treatment has more generally been recommended. To-day it is the opinion of leading authorities that an expectant management should be considered as a fundamental rule in all those cases in which no contra-indication exists at the commencement of labor, and no complication develops during the process of labor.

Such a contra-indication is a contracted pelvis. Its importance in the etiology of face presentation is well known, for we meet with it in about one-third of all cases. Another important contra-indication is placenta prævia. The third factor, which often may require interference, is feebleness of the uterine action, which may develop during the progress of labor; and, finally, anomalies of the mechanism will also require assistance, among them mento-posterior positions in which anterior rotation does not occur. Let us consider now a case with a contracted pelvis, where the true conjugate is somewhat less than four inches.

It is the opinion of most authorities that the delivery should not be left to the powers of nature. The best method to deliver the child and protect the mother in such cases is version. If this fails, it may be possible to change the extension of the head and produce flexion. If this is a failure and the chin does not rotate to the front, it might be permissible for a skilled man to apply forceps and try to perform rotation, but very carefully. The blades may be applied like Scanzoni recommends, and may be taken off and re-applied if necessary. If this also should fail and the condition of the mother demand prompt delivery, craniotomy remains as the only safe procedure.

Now, in cases of normal face presentation, where the head and the pelvis are normal, in such cases rotation usually will take place and no interference is necessary as long as the mother and child are in good, healthy condition. If rotation should not occur, we have several ways to imitate and assist nature. In cases of mento-posterior presentation, for instance, rotation may not take place, because, as Penrose recently described, the chin cannot descend far enough to meet with a sufficient resistance, and this is certainly true. He recommends a simple procedure, which deserves our attention. He applied in such a delayed case a blade of the forceps on the posterior cheek, so that it found resistance, and the chin swept around instantly. Another method is the application of the forceps and trying to bring the chin to the front in the manner described by Scanzoni, but, as Penrose terms it, coax it rather than compel it to rotate. A better method than this latter attempt to produce rotation is to produce flexion and make out of a face presentation a normal vertex presentation. This can be done in three different ways. The old way, followed hundreds of years, is described by Dr. Green. The hand is introduced, the head is lifted upward and the chin brought to the breast. If this fails, an attempt can be made to pull the occiput down, while the other hand presses firmly upon the head, through the abdominal walls. A better but more difficult method is described and recommended by Schatz. He changes the unnatural lordotic attitude of face presentations into the normal kyphotic attitude of vertex presentations by external manipulations.

This method requires great dexterity, is permissible only during the first stage of labor, and often impossible when the abdominal walls are very thick, so that it is difficult to make out the shoulders so that you have a hold on them. Schatz first showed that face presentation is not only a faulty position of the head, but a faulty position of the whole body.

The last method was described three years ago by Thorn, formerly assistant of Olshausen. The hand is introduced inside the vagina, the head lifted upward, the chin, the forehead and the occiput moved towards the breast. The external hand assists by pressing first the occiput downward, then the breast—as you see here on the board—from left to right, and finally the breech from right to left, so that a completely normal vertex presentation is produced.

This method is said not to be difficult; it can be performed even after the waters are drained off. If these methods fail, podalic version is indicated, and should this prove impossible, the obstetrician having been called too late, nothing is left but craniotomy; it is the only safe way to deliver, and in such case a conservative operation. It is not allowable under any condition to attempt to deliver with forceps when the chin is directed to the sacrum.

DR. DUFF: I would like to put myself on record. I don't believe in this conservative work in face presentation, as placed before us to-night. I think it the duty of the obstetrician to make his diagnosis early, and, having made the diagnosis, rectify it by one of the methods suggested by Dr. Blume. You have not any right to sacrifice both mother and child by a faint hope that the head is going to pass through under these circumstances where you have the opportunity of making a diagnosis early in the case. And, furthermore, I was sorry that Dr. Green did not go more extensively into consideration of the delivery of face presentation with chin posterior. The cases reported in our journals I do not believe. I believe it is an absolute impossibility for a child weighing 13½ pounds to pass through a pelvis, even if that pelvis is 6½ inches.

DR. BLUME: Dr. Green stated in his paper that external examination in face presentation fails, if I understood him right. I must say that abdominal examination is often the only way to make out an exact presentation. The head is high up if you have a contracted pelvis, and it is sometimes impossible to diagnosticate exactly by the vagina those conditions which may be readily made out by abdominal palpation and auscultation.

DR. GREEN: I agree with Dr. Kearns in his remarks to a great extent. I think myself, and I believe the general impression is, where the pelvis is not contracted that all cases would terminate successfully without any surgical interference. It may have been my misfortune to meet with a few more face presentations than some others, yet I have not seen nearly so many as some physicians who attend a much less number of cases of confinement than I do. I have never seen a delivery where rotation of the head did not occur, though I have no reason to disbelieve such men as have testified differently. I think certainly they know what they saw. I have only one remark to make in regard to what Dr. Blume has said as to deformed pelves. So far as I have looked up the matter I think his report of causes is true. A deformity of the pelvis, whilst it may produce a face presentation, is no more likely to produce a face presentation than any other position of the head, and whilst it may produce a larger number of cases than some of the other causes assigned, I would state that so far as I have read the matter up, the authors do not so state it. One further remark I wish to make in regard to the causes spoken of by Dr. Kearns, that is the motion of the child itself. Now that is given by some author, I cannot tell you by whom. Dr. Blume speaks of 33 theories (Winckel). There are more than that number. As regards version. In the cases that I saw, and as far as I have looked the matter up, version after the rupture of the membrane by external means, is not possible; it has failed entirely in the hands of the finest obstetricians. Besides, version of the child is one of the most hazardous operations to the mother. More women die after version than after any other surgical procedure unless it be after craniotomy. They can be lacerated to a great extent by the use of instruments, or by manipulation in trying to place the head in position. During anæsthesia they will endure instruments for hours, and they will endure the powerful manipulations of three or four men working for hours, and will recover, yet after version the mortality is greater.

Dr. Duff: Do you think that statistics stating the number of deaths from version during the past fifteen years would be reliable to-day? One of the great causes of mortality from version in the old statistics is the fact that we did not use antiseptics.

Dr. Green: I am glad you spoke of that. In looking this matter up I found one writer who stated that with all the present antiseptic facilities the mortality was greater.

Dr. Blume: I only want to defend version. The obstetrician more and more recognizes the value of version in some cases, but these cases must be suitable ones; you must not have a half-dead woman to practice on.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

Anæmic Œdema—Osteitis of the Ribs—Gastrostomy—Ulcerations of the Uterine Neck—Congress of Dermatology and Syphilography.

Dr. Robin read a note at a recent meeting of the Academy of Medicine, in the name of Dr. Renaud, of Lyons, in which the author describes a frequent lesion, but undescribed till now—that is, anæmic œdema. He studied the conjunctival structure of the renal tissue, which he supports on clinical and anatomo-pathological observations. The article is headed. "On the false impermeability of certain Brightic kidneys, and the therapeutics of comatose uræmia." The author explains that in nephritis in general, the number of glomerules affected is infinitely less than is supposed, and it is not in the diminution of these glomerules that one must seek the annulling of the renal functions. There frequently exists in Brightic kidneys a lesion which is known under the name of anæmic œdema. The papules of urticaria are a type of this condition. It results from an acute congestive œdema, operating in an inextensible tissue, the dermis. When the liquid of the œdema has acquired a sufficient tension to counterbalance that of the blood in the vessels, it flattens them and renders them exsanguineous, whence the pale aspect well known of the centre of the nettle-rash papule. Things do not pass otherwise in the parenchyma of the kidneys, in case of congestive, sudden and intense œdema. It results that, in the cases of chronic nephritis, the preventive treatment of uræmia should consist in a lacto-vegetable alimentation, alternated with eggs and meat which, like that of pork, do not sensibly leave toxic residues. But the principal indication is the systematic discongestioning of the kidney, not only by the application twice daily of dry cupping to the triangle of Y. L. Petit, but also by the moderate applications of leeches, each time that the coefficient of exudation is seen to be lowered. The treatment of the attack of comatose uræmia may therefore be thus summed up: One must, above all, have in view the direct discongestioning of the kidney, momentarily annulled by the uræmia. This may be effected by general bleeding, then by local bleeding, by the reiterated application of leeches, six to be placed on each side, then three only each day, until the anuria ceases. These appear preferable to scarifications. The second indication is to raise the intravascular tension, by means of drinks, by the ingestion of milk or of pure water. As the ingestion of liquids cannot be pushed to any extent, this indication may still be fulfilled by the aid of enemata of pure water; 250 grams injected each time into the rectum, every two or three hours, preceded by a purgative enema. The arterial pressure is thus not only raised, but by this means the washing of the tissues is effected, and the materials more or less toxic which are accumulated in them render them soluble. Finally, recourse is had to the frequent inhalations and almost continued of oxygen gas, which is applied to the mouth and to the nostrils, by means of a large glass funnel. One thus acts on the nervous system and on the interstitial combustions, which are raised, and which enter for a great part, in the destruction of the toxic matters retained in the interior. This treatment has not in view the cases of eclamptic uræmia of chronic degenerative nephritis, called parenchymatous. What the mechanism of the production of the uræmia in this case is, is a question which has not yet been elucidated.

Dr. Chauvel had occasion twice during the year 1889 to observe a complication of abscess of the liver, in the form of caries or osteitis of the ribs in the neighborhood of an opening of a purulent collection externally. From these two observations, which Dr. Chauvel read before the Academy of Medicine, he deduces the following conclusions: 1. Caries or chronic osteitis of one or more ribs, may present itself as a distant complication of abscess of the liver opened externally, whether spontaneously or artificially. 2. The osseous alteration, which may extend to a considerable length of the ribs and of their cartilages, is the result of inflammation produced by the contact of irritating pus. It becomes the cause of the transformation of the wound into a fistulous tract persisting indefinitely. 3. The indication is clearly to excise the fistulous tract, to remove the osseous and cartilaginous parts which are altered, to scrape the parietes of the suppurating cavity and to allow the loss of substance to be filled up by granulations from the bottom to the surface. 4. It may be necessary to resect a healthy rib to enable the surgeon to open largely the morbid focus and to excise the diseased bones. This resection, which alone permits the cure, adds nothing to the gravity, generally very slight, of surgical intervention.

At the same meeting of the Academy Dr. Terrillon recalled the circumstance of his having presented, eight months ago, a man on whom he had performed the operation of gastrostomy for an impermeable narrowing of the œsaphagus. This man fed himself by the fistula of the stomach, but the gastric juice, which was very acid, constantly ulcerated the opening and caused intense pain. Attempts having been made to reestablish the permeability of the œsaphagus, the surgeon succeeded, in the month of July last, in obtaining a sufficient dilatation to enable the patient to feed himself normally. Dr. Terrillon then resolved to close the fistula. In order to affect this the edges were vivified to the neighborhood of the mucous membrane, then the union was effected by the aid of two rows of suture. There remained of this operation a small fistula which in its turn was obliterated. The man now eats and lives like other people, but he is still obliged to wear a slight compressive bandage, and to submit occasionally to catheterism of the œsophagus.

In writing on ulcerations of the uterine neck, Dr. Terrillon states that this ulceration is only a myth excepting of course specific ulcerations. According to the author these so-called ulcerations are the result of metritis. The surgeon should therefore treat the metritis without occupying himself about these apparent ulcerations, and these will disappear when the remainder is cured, without having recourse to cauterizations which are so much abused.

The first meeting of the Congress of Dermatology and of Syphilography for the year 1890 will take place on Thursday, the 10th of April, and continue on the two following days, from 9 to 11 A.M., at the Saint Louis Hospital. The programme of the questions to be treated should be forwarded before the 1st March, to Dr. E. Vidal, general secretary, 65, rue d'Anjou, Paris.

The meeting of the Société Francaise d'Ophthalmologie for 1890 will take place on Monday, May 5th, 1890.

A. B.

DOMESTIC CORRESPONDENCE.

Army Medical Board.

WAR DEP'T, SURGEON-GENERAL'S OFFICE,
WASHINGTON, D. C., February 8, 1890.

To the Editor:—SIR: The Surgeon-General directs me to invite your attention to the enclosed notice of the organization of an Army Medical Board, to meet in New York City on May 1, 1890, and to request that you will give it a place in your journal as a matter of news, and to call such attention editorially to it as you may deem proper. Very respectfully,

CHAS. R. GREENLEAF,
Major and Surgeon, U. S. Army.

NOTICE—AN ARMY MEDICAL BOARD will be in session in New York City, N. Y., from May 1 to 31, 1890, for the examination of candidates for appointmenf in the medical corps of the United States army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application for the necessary invitation to the Secretary of War before April 1, 1890, stating the place of birth, place and State of permanent residence, and enclosing certificates based on personal knowledge from at least two physicians of repute, as to professional standing, American citizenship, character and moral habits; also, statement of service in hospital from the authorities thereof is desirable. The candidate must be between 21 and 28 years of age and a graduate from a *regular medical college*, as evidence of which his diploma must be submitted to the Board.

Further information regarding the examinations and their nature may be obtained by addressing the Surgeon General, U. S. Army, Washington, D. C.

JNO. MOORE,
Surgeon-General, U. S. Army.

CIRCULAR OF INFORMATION FOR MEDICAL MEN WHO MAY BE DESIROUS OF ENTERING THE U. S. ARMY MEDICAL DEPARTMENT.

The Medical Department of the army consists of one Surgeon-General with the rank of Brigadier-General, one Assistant Surgeon-General, one Chief Medical Purveyor and four surgeons with the rank of Colonel, two Assistant Medical Purveyors and eight surgeons with the rank of Lieutenant-Colonel, fifty surgeons with the rank of Major, and one hundred and twenty-five assistant surgeons with the rank of First Lieutenant of Cavalry for the first five years of service, and of Captain of Cavalry subsequently until their promotion by seniority to a majority.

With the rank stated in each case the pay and emoluments of the rank are associated. The salary of each grade is a fixed annual sum payable monthly; but at the end of each period of five years of service the annual sum representing the pay of the grade is increased by 10 per cent. until 40 per cent. is added. After twenty years of service the 40 per cent. additional continues to be drawn, but the further increase of the pay by 10 per cent. additions ceases, *i. e.*, an officer, although he may have served twenty-five or thirty or more years, can, under existing laws, have no more than 40 per cent. added to his pay proper by way of increase for length of service. The pay of a first lieutenant of cavalry or of a medical officer during the first five years of his service is $1,600 per year, or $133.33 per month. At the expiration of his five years of service he becomes, by virtue of that fact, a captain, and his pay is that of a captain of cavalry, $2,000 per year, increased by 10 per cent. for his years of service, viz, $2,200 annually, or $183.33 monthly. At the end of his tenth year of service this rate of pay is increased by the service-addition to $2,400 annually, or $200 per month, and after five years more the service-addition makes his pay $2,600 annually, or $216.67 per month. If he continue in the rank of captain, at the end of twenty years of service his monthly pay becomes $233.33; but about this time promotion to a majority is usually obtained, and a major's annual pay of $2,500, with 40 per cent. added, makes the monthly pay of the major and surgeon $291.67. Subsequent promotion, investing the individual with the rank of lieutenant-colonel, colonel and brigadier-general, augments the monthly pay respectively to $333.33, $375.00 and $458.33. Compulsory retirement at the age of 64 years increases the rapidity of promotion to the younger men; and when retirement is effected either by age or by the accidents of service prior to reaching the retiring age, the rate of pay subsequently drawn is 75 per cent. of the total salary and increases of the rank held by the individual at the time of his retirement. Thus, a major retired for broken health after twenty years service draws 75 per cent. of $291.67 per month; a colonel retired for age, 75 per cent. of $375.00. The medical officer has the right of selecting quarters in accordance with his rank, and when stationed in a city where there are no Government quarters, commutation money, intended to cover the expenses of house rent, is paid to him. The Government provides forage and stable room for the horses of the medical officer, and when traveling under orders the expenses of transportation are paid by the Quartermaster's Department.

Among the privileges granted to medical, as to other officers of the army, is that of leave of absence on full pay. The authorized leave amounts to thirty days annually. This leave is not forfeited if not taken during the year, but is credited to the officer, who may thus accumulate a continuous leave of four months on full pay. If he desires to be absent for a longer period than four months, and the permission is accorded him, he is reduced to half pay for all time in excess of the four months or maximum of cumulated leave of absence. Absence from duty on account of sickness does not affect the relations of the officer with the paymaster; he continues to draw full pay.

A commission in the Medical Department of the army is an instrument which is good for life, premising conduct consistent with its retention on the part of its possessor; but it involves no contract which binds the individual to service for any given number of years. On the contrary, should the medical officer find on experience that civil life has greater attractions for him than that of the army, there is nothing to prevent him from at any time tendering the resignation of his commission.

A young medical officer, on appointment, is usually assigned to duty for a few months at some large post where there are other officers of his department, to afford him opportunity of becoming acquainted with the requirements of the Army Regulations and the routine duties of military life. After this he goes to some post west of the Mississippi river, where he serves a tour of duty of four years. An assignment in the east follows the leave of absence which is usually taken at this time; and in after years his stations are selected so as to give him a fair share of service at what may be called desirable posts, as an offset to the time spent at less desirable stations.

Candidates for appointment to the Medical Corps should apply to the Secretary of War for an invitation to appear before the Army Medical Board of Examiners. The application should be made in the handwriting of the applicant, should give the date and place of his birth, and the place and State of which he is a permanent resident; it should be accompanied by certificates based on personal acquaintance from at least two persons of repute as to citizenship, character and moral habits. Candidates must be between 21 and 28 years of age (without any exceptions), and graduates of a regular medical college, evidence of which, the diploma, must be submitted to the Board. The morals, habits, physical and mental qualifications and general aptitude for the service of each candidate will be subjects for careful investigation by the Board, and a favorable report will not be made in any case in which there is a reasonable doubt.

The following is a general plan of the examination:

1. The physical examination will be rigid; and each candidate will, in addition, be required to certify "that he labors under no mental or physical infirmity, nor disability of any kind, which can in any way interfere with the most efficient discharge of any duty which may be required."
2. Oral and written examinations on subjects of preliminary education, general literature, and general science. The Board will satisfy itself by examination that each candidate possesses a thorough knowledge of the branches taught in the common schools, especially of English grammar, arithmetic, and the history and the geography of the United States. Any candidate found deficient in these branches will not be examined further. The examination on general science will include chemistry and natural philosophy, and that on literature will embrace English literature, Latin, and history, ancient and modern. Candidates claiming proficiency in other branches of knowledge, such as the higher mathematics, ancient and modern languages, etc., will be examined therein, and receive due credit for their special qualifications.
3. Oral and written examination on anatomy, physiology, surgery, practice of medicine, general pathology, obstetrics and diseases of women and children, medical jurisprudence and toxicology, materia medica, therapeutics, pharmacy, and practical sanitation.
4. Clinical examinations, medical and surgical, at a hospital, and the performance of surgical operations on the cadaver.

Due credit will be given for hospital training, and practical experience in surgery, practice of medicine and obstetrics.

The Board reports the merits of the candidates in the several branches of the examination, and their relative merit in the whole, according to which the approved candidates receive appointments to existing vacancies, or to vacancies which may occur within two years thereafter. *At the present time there are seven vacancies to be filled.*

An applicant failing in one examination may be allowed a second after one year, but not a third.

No allowance is made for the expenses of persons undergoing examination, but those who are approved and receive appointments are entitled to transportation in obeying their first order assigning them to duty.

John Moore, *Surgeon General.*

Approved: Redfield Proctor, *Sec'y of War.*

War Dep't, Surgeon General's Office,
Washington, D. C., December 12, 1889.

MISCELLANY.

LETTERS RECEIVED.

Dr. E. T. Vaughan, Evansville, Ind.; Dr. E. S. Lincoln, Wabasha, Minn.; Dr. D. B. St. John Roosa, New York; W. T. Keener, Chicago; Dr. Theo. Griffin, Baxter Springs, Kan.; P. Blakiston, Son & Co., New York; Dr. J. J. Bland, Houma, La.; Free Press Printing Co., Mankota, Minn.; Dr. W. H. Wathen, Louisville, Ky.; Dr. W. Murray Weidman, New York; Dr. G. L. Simmons, Sacramento, Cal.; N. Y. Engraving and Printing Co., New York; Publishers' Commercial Union, Chicago; E. Merck, New York; Dr. F. C. Hotz, Chicago; Dr. Chas. H. Knight, New York; Dr. L. S. McMurtry, Louisville, Ky.; Dr. R. S. Brice, Keota, Ia.; Dr. Edwin B. Shaw, Kansas City, Mo.; O. H. Haven, Youngstown, O.; Dr. William W. Pearce, Waukegan, Ill.; The Microscopical Society, Chicago; E. Merck, New York; F. C. Lewis, Catskill, N. Y.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from February 8, 1890, to February 14, 1890.

Capt. B. D. Taylor, Asst. Surgeon, is granted leave of absence for fifteen days, to take effect on the 15th prox. Par. 2, S. O. 17, Hdqrs. Dept. of the Missouri, February 7, 1890.

By direction of the Secretary of War, Lieut.-Col. Charles B. Alexander, Surgeon, is relieved from duty as examiner of recruits at New York City, and will report to the commanding General, Div. of the Atlantic, for duty as attending surgeon in that city. Par. 1, S. O. 33, A. G. O., Washington, February 8, 1890.

By direction of the Secretary of War, Major Henry McElderry, Surgeon, is relieved from duty at Fort Wayne, Mich., and will report in person to the Superintendent of the U. S. Military Academy, West Point, N. Y., for duty as post surgeon, relieving Major Henry R. Tilton, Surgeon, who, after being thus relieved, will report in person to the commanding officer, Ft. Wayne, Mich., for duty at that station. Par. 13, S. O. 33, A. G. O., Washington, February 8, 1890.

By direction of the Secretary of War, the extension of leave of absence on surgeon's certificate of disability granted Major Leonard Y. Loring, Surgeon, in S. O. 268, November 16, 1889, from this office, is still further extended two months on surgeon's certificate of disability. Par. 7, S. O. 34, A. G. O., Washington, February 10, 1890.

Major Henry R. Tilton, Surgeon, is granted leave of absence for two months, to take effect upon his being relieved from duty at the U. S. Mil. Academy, West Point, N. Y., by direction of the Secretary of War. Par. 6, S. O. 34, A. G. O., Washington, February 10, 1890.

By direction of the Secretary of War, the retirement from active service on February 9, 1890, by operation of law, of Col. Andrew K. Smith, Surgeon, under the provisions of the Act of Congress approved June 30, 1882, is announced. Col. Smith will proceed to his home. Par. 5, S. O. 34, A. G. O., Washington, February 10, 1890.

By direction of the President, Capt. Louis W. Compton, Asst. Surgeon, is detailed as a member of the Army retiring board at Chicago, Ill., convened by War Dept. order dated November 18, 1889, published in S. O. 269, November 18, 1889, from Hdqrs. of the Army. Vice Major Henry McElderry, Surgeon, hereby relieved. Par. 9, S. O. 36, A. G. O., February 12, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending February 15, 1890.

Medical Director N. L. Bates, ordered to Naval Hospital, Mare Island, Cal.

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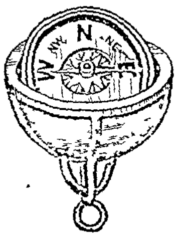
ORIGINAL ARTICLES.

THE USE, TWENTY-FIVE YEARS AGO, OF POLARITY, FOR LOCATING THE WHEREABOUTS OF A LEADEN BULLET DEEPLY IMBEDDED IN THE BODY.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889

BY ADDINELL HEWSON, A M., M.D.,
OF PHILADELPHIA



In the records of most, even of the greatest of this world's heroes, events of much moment, which it was important at the time of their occurrence, should not be made known, have often been so completely, and long suppressed as to subsequently render the possibility as facts almost incredible. Such may seem with some of my hearers to be the case as regards many of the circumstances associated with the incident which it is my purpose to relate in this communication.

It occurred in the life of one of the truly great heroes of our internecine war, and, at a period when its publication would have been demoralizing to the Union cause, yet it involved such a brief space of time as not to necessitate its being recorded, or any account made of it; and the events which rapidly followed in this hero's life were of such a momentous character as to entirely overshadow it.

This officer's injunction to me on my first seeing him on this occasion was for the greatest secrecy as to his being in Philadelphia under my care, as well as to the character of his injuries, and was absolute, and given to all others as was evidenced by how universally it was heeded. It was, I believe not known at all at the quarter-master's office in Philadelphia until after he had been on and gone back to his post again. Finally the injunction to secrecy with me was, as a consequence of his rapid convalescence so removed within three days of his reaching me as for him to permit my describing to my hospital class what I had done in the case. Still I was not then or afterwards, as he said, to anticipate the account he would give of the event in his autobiography. A quarter of a century has since passed away and for more than half of that time this hero has been in his grave, and that too without any detailed account of his life having yet been published. The recital of these facts is therefore essential as a prelude for the proper comprehension of the form of account which I shall now give of the circumstances pertaining to it, and must also serve to explain the omission of names and other facts, the narration of which would no doubt add vastly to it as a whole.

On the evening of Saturday, June 20th, 1863, I received a telegram at my office to call the following morning at a private residence in Philadelphia, which I knew as that of an officer in the Union army, and, recalling the fact that he had been in Philadelphia, about a year previous, to see me for a few days on account of a wound he had then received in battle, I at once thought he had again been so injured and was prompt in making my visit to his house the next morning at the time when it would be, then Sunday morning, least likely to attract attention in the neighborhood; for I knew, from the previous occasion, that he would be desirous of preventing any knowledge of his being home, getting abroad.

As my carriage passed along a cross street in my way there I noticed a field coat hanging from the rear of the second story of his house and then surmised that he was undoubtedly home and this time most likely wounded in the body. On entering the house I was told that he had been brought home fatally wounded by a ball in his lungs and I was taken immediately to his bedroom. There I found him sitting up in bed, evidently in much suffering, but on his seeing me he was not willing to answer a single question until he said that he must be back at his post within five days, and, that I was to observe the greatest secrecy and silence. All of which showed, as I knew him, to be a man of strong nervous temperament, a state of much excitement, and my first action then was that usual with a patient suffering from an injury in the chest, namely, the sounding of that part of his body by percussion, directing him not to talk whilst I did so. It surprised me exceedingly, and I immediately ran one of my ears up and down each side and on the front and back of his lungs with sufficient care and slowness to allow me to detect his breathing throughout both. Then I could suppress my surprise no longer and exclaimed, "Why there is no bullet in either one of your lungs, there is no sign of either side having been penetrated by one." "Ah, wait until you have me thoroughly uncovered, and have explored the wound," said he. On removing his clothing I found a single, clean-cut wound, vertical in direction, about half an inch in length, located close to the outer border of the left shoulder blade, just where that bone usually rests in front of the eighth rib. There were no signs of the rib having been broken, or even uncovered, of the spaces between it and its fellows either above or below, having been penetrated; though I searched for such most faithfully, with the aid of a delicate probe and sounding board attached to it; my attention was then directed to his breathing for the second time. His respirations were evidently those purely characteristic of a man, there was no heaving of the upper chest. He was leaning forward and especially to the left side, as though he was constantly being impelled to prevent the expansion or separation of his ribs there. His respirations were short and frequent, and his heart was much agitated. His temperature above normal. To determine accurately his pulse I drew out my watch from my vest pocket, by means of its guard to which was attached at its far end a small compass which I had been wearing there for many years as others did various forms of "charms." Its presence suggested at once in connection with the character of the cut which the ball had made through his clothing and in his side, the possibility that the said bullet might be a steel one, as the Southerners were then using such in the rifles recently imported for them from England. Following up quickly this idea I carried this compass close to the integuments across the patient's chest, up and down, and in every conceivable manner and direction. At first the needle did not seem to be disturbed any more than was naturally consequent to the changes made of its poles by those movements. This was particularly the case when the dial plate was being held horizontally and in close proximity to the wound of entrance; the patient being seated astride of a chair with his back toward a window facing North. When the needle was then parallel to the side of chest its North pole pointed to the window and was quiet in that position; but as I moved the instrument more around toward the spinal column I thought I perceived some agitation of its needle greater than that due to the movement and that this was greatest when it was at the level of the wound of entrance and nearest to the base of the shoulder blade. The patient had no recollection of the moment of his receiving the ball or how it reached him; indeed he had not become aware of his being wounded until his attention was called to a free bleeding on his outer clothing above his sword belt. He was, at the time, making reconnoissance of his opponents who were in advance on his bridle path.

As he further answered in the affirmative to my queries that he was mounted and holding a high rein, I took his left fore-arm and supporting the elbow nearly on a level with the front border of the arm-pit of that side and drawing it forward and across the chest I caused him considerable pain in the vicinity of where I had previously noticed the agitation in the magnetic needle to be the greatest. Putting the compass in the same attitude as before, I again got the agitation still better marked. Then, laying down the instrument which I had been holding with my watch by my right hand, I found, by pressing the index and middle fingers of that hand on the spot indicated, that there was some ill defined hardness, firmer pressure on which caused him more decided pain and I was then confident I had there discovered the locality of the ball. This I stated to the patient, endeavoring in doing so, to have him understand how all previous examinations had failed to reveal its whereabouts, but I was quickly interrupted by his saying, "Oh, I have no fault to find with what has been done or left undone. What I want to know is whether you can get it out; and if so, I want you to do it as speedily as possible." For that purpose I provided myself with a small scalpel, a pair of bullet forceps, a grooved director. And, as he was not willing to take ether or choloform, I used the analgesic effect of ice sprinkled well with table salt and pressed firmly on the place for some eight or ten minutes, when the surface so pressed on, which was for the extent of about three inches in diameter, became purplish white and was found to be insensible to the touch. Then, on removing the piece of ice and placing the compass in the position in which it had showed the greatest disturbance before, it became more agitated than ever and I proceeded to make an incision there on to the posterior border of the shoulder-blade at an angle of about forty degrees to the spinal column and over two inches away from it. This was a straight cut of an inch in length, so directed as to separate rather than to divide the fibres of the muscles which I knew I must get through there, to reach the desired object. That incision, at a depth of about two inches, brought the point of my scalpel directly on to a hard substance in surrounding soft muscular tissue, which, by further contact, was readily recognized as metal, and which, after some expanding of the cut, was shown to be the bullet between the two great muscles—the subscapularis and the serratus magnus—which are fastened together on the base of the shoulder-blade, and I had concluded had to be cut through before I began the operation. The completion of the operation—that is the extraction of the bullet—was quickly effected, and the brief and partial freezing of the parts through which it had to be done, rendered it one of absolutely no pain whatever to my patient. Indeed, he seemed at first unwilling to accept my assertion that I had succeeded in my undertaking, but his conviction to the contrary was promptly brought about by placing the bullet in his hand. I then cleansed the wound and brought its edges together carefully, so that they were in perfect apposition throughout, and secured them, so, by means of Goddard's strips of gauze and collodion supported by a roller bandage which was made to retain the arm in perfect rest. I then had my patient put into his bed, and, after directions about his diet, and that he should be kept perfectly quiet, I left him, going to an adjoining room, where I carefully washed and examined the bullet and then gave it to the patient's wife for her to keep, and that too without any comment upon it. On calling in the evening and learning that my patient was sleeping quietly, I left the house without disturbing him.

On my visiting him the following morning he quickly called my attention, as I had expected, to the fact that the bullet was not, after all, a steel one, but one of lead, or at least of a soft metal, for he had had it thoroughly cleansed and then scratched across the surface by a knife with which it was readily uncovered and penetrated; saying as he had the ball handed to me, "Your compass could not have really helped you to find it, for it is leaden, and every school boy knows that anything of lead cannot disturb the pole of a compass." "Oh," I answered, "Such used to be considered correct but, as far back as 1829, Bailli showed that bismuth would act in the opposite direction to iron on the magnet." This I said in the spirit of playful humor and was about to remark further, that Faraday had, something like forty years previously, shown the power of a great variety of articles; of liquids; of gases, and of salts, including those of lead, to excite motions of various kinds in the magnet, when my patient manifested some dissatisfaction in his manner and I saw I had spoken imprudently, and not only checked myself, but at once agreed not to talk of the matter again, as I desired to avoid doing or saying anything which might interfere in the least with his rapid recovery. How well I accomplished this purpose was evident from the rapidity with which he did recover. There was no suppuration whatever along the track of the ball or from where it was removed, and he returned to his duty on the night of Friday, June 26th, within five days of the time of his being subjected to the operation by me.

The compass I used in this search was a Christmas gift from a playmate when I was a boy and had not only been constantly worn on my guard, from the time I first had a watch in those days, but in my student life in Philadelphia, Paris, London and Dublin. It had served its purpose in my walks in the vicinities of those places and as a guide through the charming regions known as the Lake Districts of England and those of Wicklow and Arklow in Ireland.[1] It consisted of two hemispherical bowls of gold of the relative sizes for their outer rims of the one cent and two cent coins, United States currency of the present day. The larger measuring seven eighths of an inch and the smaller thirteen sixteenths of an inch in their diameters respectively, fastened together by two gympal pins so that the latter bowl could not only always rotate inside the former, but would have its face, or equatorial surface, of glass, constantly looking up and horizontal. Through that glass could readily be seen the dial plate with its plain black and very distinct letterings; the needle, mounted on the pivot by its flat cap of brass which allowed the utmost freedom of motion in every direction, the inner surface of the glass near enough to this cap to prevent its getting off the pivot, but far enough away for the free dipping of either pole—the actual length of the needle from one extremity to the other, just one half an inch—that of the sections, North and South, of the cap, three sixteenths each, leaving just one eighth of an inch for the diameter of the cap. The north section of the needle was of a positively dark bluish hue whereas its south section was of an equally distinct whitish steel color. The dip of the far end of the north section and the corresponding elevation of the extreme of the south section from the centre, all made this trifling looking "little charm," an instrument of real value for experimental investigations.

The loadstone and the compass were the subjects of scientific interest to which the earliest of my recollections could ever refer. I had six brothers and two sisters older than myself, so that, when I began to get out of the nursery at home, the companions of the oldest of them were at an age to be objects of special attention for me, particularly as to all they said and did, and as one of the most companionable of them was then preparing to enter the navy, he had *his* loadstone and *his* compass, the mysteries of which he was always ready to show to even the least of us all. The naval battle he treated some of us to on one occasion in a wash-tub in my father's garden, stands farthest back in, but never can be lost to, my memory. The ships were represented by chips of wood with well-defined bows and sterns, and two or three masts according as to whether they were to be considered as sloops or frigates of war, which were the characters of fighting vessels in those days. Each single decker had its proper number of guns made of fragments of sewing needles extending across its upper surface, the points, heads, and broken ends of which fragments, were each charged by the loadstone for special sides, that is, by the north pole for the right side, and by the south pole for the left, so that when these chips were pushed from opposite sides and made to approach near enough to exert the magnetic influence of their bits of needles on each other, one set repelled the other—they ran away from each other—the lesser ones apparently fleeing from the larger ones more rapidly and being made to turn more away so that the scattering of them was not symmetrical, whereas when they were started from the same side of the tub and approached, they very quickly collided, the larger ones evidently running with more force into the smaller ones and striking them at such an angle as in some instances to upset the ones so impinged upon. The angles of impingment gave as much, if not more, variety to this form of battle than occurred in the other, and always made its repetition more enjoyable.

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[1] The initial picture of this paper is an accurate representation of it, both as to size and appearance, with the needle pointed as though the reader was sitting with the top of the page looking East.

Then, again, another frequent visitor at my father's house, and, companion of some of my older brothers in my early boyhood, was one of the sons of Dr. John Redmond Coxe, professor in the medical department of the University of Pennsylvania, and living at Ninth and Walnut streets (in the house next but one to that of my father) and which was afterwards occupied by Dr. Hugh L. Hodge, when he was a professor in that same institution. There may be some of my hearers to-day who recollect the offices attached to that house and the immense collection they contained in Professor Coxe's days, of books, philosophical apparatuses, and instruments of various kinds. I remember, as though it was but yesterday, being on one of those days taken by that son of the professor into the front room of those offices and shown many compasses and electric machines, and especially the spark which the latter produced. I was then, first of all, warned against touching the machine by which those sparks were being generated lest I should get burnt by them, but shortly afterwards I was induced to take hold of a handle which was attached to a covered wire which was suspended on the wall around the room and whilst holding it my entertainer passed a spark to the other end of that wire and I instantly felt the shock from it and I screeched for terror. That incident was of course not soon forgotten and was quickly recalled in all the details when Morse's proposal to create a telegraph by sending such sparks along insulated wires mounted on high poles in the roads between various places was first made known to me.

When older my delight was to revel in all the oddities and curiosities of my father's library, which had been collecting for more than three generations in his family. I was not slow then in ascertaining the whereabouts not only of his father's (William Hewson, the anatomist) books on blood and the lymphatics, but the MSS. for the same, and for all his papers to the Royal Society of London, the "Copely Medal" awarded to him by that society for his being the greatest discoverer in science for the year 1769. With them were stored many of the original drafts of Franklin's letters to the scientists written by Mary Stevenson (afterward William Hewson's wife) whilst Franklin was an inmate of her mother's house, Craven street, Strand, London, *i.e.*, during all the time he was agent for the Colony of Pennsylvania to the British court. Here came an extension of my interest and knowledge in the magnet and subjects relating to it. Before I was fourteen years old I had made for myself a generator of electricity and a Leyden jar for its accumulation and preservation.

Hence, when I went to London for the first time, in 1850, shortly after receiving my degree of M.D., I had not only my "little charm" on my watch-guard, but was prepared, with long accumulating interest, to enjoy everything I might learn there about the subject, and through very fortunate circumstances I immediately on my arrival had free access given me to Faraday's laboratory and studio. There I enjoyed with more than ordinary delight the appliances by which that great philosopher, years before, had startled the scientific world by demonstrating the existence of *polarity* in everything; explaining thereby, not only, the long familiar experiment of the arranging of particles of iron-filings in curves, when they were placed on a sheet of white paper near a magnet, but those of the hairs of animals, of the human body also, of the feathers of birds, of the stems, blossoms, flowers and foliage of all kinds of vegetable life. There Faraday had demonstrated magnetism and also the presence of distinct polarity, in each particle of all such substances, the oppositely polarized end of which particles being the occasion of their cohesion together and the surplus, over and above needed for that purpose, he there had shown was the occasion of the curves in nature.

My dear "little charm" had then fresh interest given to me. For after those delightful and well to be remembered visits at Faraday's rooms, I was led constantly to study the disturbing influences which many articles seemed to have on its poles. Thus, when stage-coaching immediately afterwards in England—a luxury rarely to be met with even in those days—or when riding

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NOTE.—This device of Prof. Coxe was undoubtedly the basis of the claim made for him as an originator of the electro-magnetic telegraph before Morse, Prof. Tyndall (notes of two courses of lectures before the Royal Institute) fixes the date of Coxe's proposal about 1808.

in railway cars or walking, I would take my bunch of keys and study what effects its individuals produced on the needle. Some, many indeed, had no effect on its north pole when near it, others would increase when there its dip; others again, when approached to its south pole, would agitate it or cause its nearer contiguity to the glass and keep it there.

These circumstances had been quickly recalled to my mind, and furthermore, when in connection with this case I afterwards took up the subject anew, I found much in addition that was of special interest relating to it, and to which I must make some references before closing this communication.

First, there were the physical conditions of the bullet itself and its immediate surroundings of which I had to take account in estimating or appreciating its power to disturb the polarity of my compass. Its metal (lead) as shown by Faraday as far back as 1830 was not only capable of acting on the south pole of a compass as in contrast with iron and zinc which acted on the north pole, but such action was to be found much increased by the locality where it was lodged, for there the heat and moisture was peculiarly great, as Lavoisser had demonstrated as long ago as 1777. He then showed that those conditions of heat and moisture were not only greater in a locality like that between the subscapularis and latissimus dorsi, than immediately under the skin, but than in the lungs or plural cavities themselves. Mariani (*Annales de Chem.*, p. 40) states that they—heat and moisture—according to his researches increased this power of lead to act on the south pole of the compass, and Mons. de la Rive more recently (*Biblioth Universal*, vii. p. 388, 1837) has stated that the effect of 5° of increase of heat alone produced in his experiments a deflection in the galvinometer he used of from 12° to 45° when applied to the south pole, whereas the same produced no effect when applied to the north pole. Faraday (series xvii, p. 64 of his 2nd volume), speaking of this statement of De la Rive, says that in a repetition of those experiments he has "no doubt that the phenomena will prove to be virtually the same." Then, also, Claude Bernard, whom we must all recognize as one of the most accurate experimental physiologists of the present time says that hot air acting on the skin creates a rise of temperature more rapid than when the same is merely introduced into the pulmonary vessels. He proved also that when the hot air is damp the phenomena take a more rapid course and were as great as at dry, a lower temperature, and furthermore that dampness promotes a rise of temperature by itself.

Secondly, there were the physical conditions about the compass itself of which I was not to lose sight in my estimation of the circumstances which affected the phenomena I have related. Of these I was well prepared to make good count likewise through previous study. I refer here to the details of materials I collected prior to 1857 for my paper "On the influence of the weather on the results of amputations in the Pennsylvania Hospital during a period of thirty years." (See Pa. Hosp. Report for 1857.)

Before entering on the consideration of these conditions we must have some accurate and definite scientific idea as to what the needle of the compass is. Faraday states (series xxvi. for Oct., 1850, p. 254) it is "a balance on which all the magnetic power around a given locality fastens itself, and it shows for each place every variation in their amount or disposition, whether that occurs near or far off. Its mean position is the normal position, and as regards atmospheric changes the fixation of the lines of force in the earth (2919) is that which tends to give the lines a standard position (exclusive of secular changes) and so bring them and the needle back from their disturbed to their normal state." The size of the needle of the compass I used in this case I have given (on p. 10 MSS.) as that of one half an inch from the end of one pole to that of the other. This according to the best of authorities (Charles Augustine de Colomb Sur l'Elect. et Magnetisme, Paris, 1789? and Capt. Kater, the inventor of the prismatic compass) was sufficient to manifest all the various secular disturbing influences within several inches of its locality and possessed advantages over one that was more than five inches long, for in the latter several poles are apt to be produced, the effect of which is to lessen the force of the single polarity sought for. It is also composed of shear steel which according to those authorities was found to be the best material for the purpose of making a very sensitive compass needle with.

With these facts before us we may now fairly take up the consideration of the various physical conditions surrounding the instrument which might depreciate or increase the power of the leaden bullet to act on the needle. These conditions were essentially those of the atmosphere and of what could affect it where the patient was at the time. Here we have to take account of the temperature of the air, the presence or absence of the sun's rays, the state of the barometer, the presence or absence of moisture, the actual locality of the patient as to his being in or out of the open air, as well as to the relations of his body to the points of the compass, and also even to the time of the day at which the explorations were made; for these are all well recognized as disturbing causes of such conditions. Even Faraday, whom I have quoted from very freely heretofore on account of his being the most accurate and logical writer on the subject we can refer to in any language, says (2936), "The well-known action of the sun on the needle is very indirect;" "the sun at a given place affects the atmosphere, the atmosphere affects the directions of the lines of magnetic force, those lines of force there affect those at any distance and they affect the needles which they respectively govern." Again I can quote the facts from said authority that "the variations in the intensity of atmospherical magnetism is greater before the sun crosses the meridian" (*i. e.*, before midday), and "when he is uncovered or shining brightly in the place where the observations are being made."

The concurrence of all those conditions in favor of the action of the leaden bullet on the compass proved to me most singular. The time was before midday—it was a hot day in June, whose early morn was close and overcast, but whose sky was quickly cleared as the sun approached the meridian and shone through the open window before which I had my patient seated astride of a chair, with such brilliancy as to cause those present to hail his rays with warm expressions of delight at the time, the patient specially exclaiming, "Oh, that is a hopeful and encouraging sign"—an exclamation to which I readily assented. I had indeed to push him somewhat away from the window to get him out of the sun as I arranged things for the operation, but in doing so I kept his left side nearer to the window than its fellow and so, without any such purpose in my mind, I placed him more correctly on a line with his back looking due north than he was before; the surface of his back having been previously parallel to the window, and the latter being parallel to the main street, was therefore actually nearly two full points (of 32°) out of the way.

Finally, I must refer to the action of my compass when placed on the patient's back whilst that surface was so frozen by the direct contact of the ice and salt as to allow of its being cut into immediately afterwards, with the utmost freedom, without causing him pain. This action was one of a positive increase of the attraction and of the agitation of its south pole over what I had noticed as occurring with it in the same locality before the application of the freezing process. No time was noted as to the length of that application before I tested its effects on the needle. It was recorded that the surface for an area of 3 inches was of a purplish white hue, hardened and insensible to the touch. The inner bowl of the instrument was then put in close contact with that surface and when there it was moved about, in a range of 2 inches of the whereabouts, as I then supposed, of the ball; the needle was then more agitated and more markedly attracted to one special point than ever before. The change in temperature which the application of the ice and salt had caused was from without inwards and was greatest on the surface of the skin. It was never such as to seriously affect the vitality of any of the tissues. Those of them which were readily visible, soon after their being cut into, quickly recovered their natural tints and gave vent to some bleeding. That in which the ball was lodged contained enough of old clot and serum to surround the ball and was positively warmer than the surface of points considerably far away. It had not been reached by the freezing, and showed in the changes of its effused blood the effects of heat and moisture, rather than of cold, certainly than, of that sufficient to produce solidity and dryness of the other tissues. A study of the changes in those tissues which constituted the medium of communication between the ball and the needle then made it quite apparent that it was in them that was to be found the cause or causes for the increase of the disturbances of the needle over what had been previously observed. The freezing application used in this instance can, according to Sir Humphrey Davy, reduce the temperature of substances and liquids 50° F., the resulting solidification being essentially dependent on changes in the water present in them. It starts when that fluid gets down to the temperature of 39° F. The water then begins to assume an opaqueness which reaches its completeness when every primitive particle of water in it has actually gotten own to 32° F. They are solidified at that temperature into a mass which is lighter than their original bulk of water, and was first shown by Boyle to be one-ninth greater in bulk. This expansion has been shown also to equal a force of 27.720 lbs. for each cubic inch. The forming of ice is attended by an arrangement of the primitive particles of water with each other different from that which existed in their previous state They have a greater attraction set up for each other than existed before, and so become separated more or less completely from substances or fluids previously suspended or maintained between them, an action which has been used, as distillation is, to free fluids and substances of their superabundance of water or, in other words, to concentrate their strength. The facts as regards the reduction of temperature which I have now related as concerned on the solidification of water will aid us materially in the explanation of the disturbances of the compass noticed after the application of the freezing process to the patient's back. The tissues under it had become decidedly opaque, dry and solid, as well as devoid of sensibility. The first three (physical) conditions evidently being the effects of the reduction of the temperature of the tissues below 39° F., but as those tissues did not have their vitality materially disturbed, it is equally evident that their temperature never got below 32° F. Say it was only 34° and we have the authority of Faraday that such a temperature would intensify the action of lead on

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NOTE.—The streets of Philadelphia as laid out by Wm. Penn were intended by him not only to be at right angles to each other, but to correspond with the four main points of the compass, which they are now known not to do for the extent above specified.

the south pole of the magnet most markedly, especially when the location of the metal was no further away than 3 inches beneath the surface. We have also hosts of authorities amongst recent experimental physiologists that the changes of magnetic conductibility of human flesh arising from variations in it of temperature above or below the average of the body in health (67° F.), accurately corresponded with each other; *i. e.*, that an increase, say, of 5° above that point brought about the same effect in that respect that a decrease of the same number of degrees would. We have, however, seen that the increase of the temperature in my patient's back, although positive and readily recognizable, was not of many degrees Fahrenheit; whereas, that of loss by the freezing process must have been at least 30° of the same scale. Six times greater! I certainly do not need to pursue this point further to prove the correctness of the effects observed by me.

1434 Spruce St., Philadelphia.

TROPHOPATHY IN THE FATTY AND FIBROID DEGENERATIONS; JOINT PAPER.

Read in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY EPHRAIM CUTTER, M.D., LL.D.,

GOLD MEDALIST OF THE SOCIETY OF SCIENCE, LETTERS AND ART, LONDON; AUTHOR-BOYLSTON PRIZE ESSAY FOR 1857 ON "UNDER WHAT CIRCUMSTANCES DO THE USUAL SIGNS FURNISHED BY AUSCULTATION AND PERCUSSION PROVE FALLACIOUS?" PRINCIPAL MEDICAL DEPARTMENT OF INSTRUCTION OF THE AMERICAN INSTITUTE OF MICROLOGY, ETC., AND

JOHN ASHBURTON CUTTER, M.D., B.Sc.,

FORMERLY ATTENDING PHYSICIAN TO DISPENSARY NO. 3 OF THE INTERNATIONAL MEDICAL MISSIONARY SOCIETY.

INTRODUCTION

The animus of this contribution is the belief of the writers that *trophopathy* (*trophos*—food; *pathos*—disease) has more to do with the cause and cure of the so-called incurable diseases than the profession gives credit to; and to show that our belief is founded on facts, we will immediately proceed to the consideration of the subject in the concrete, to wit: the reading of histories of some patients that have been under our care.

CASE HISTORIES.

Case 1.—A little more than four years ago, a gentleman brought to our office a friend, who appeared to the senior writer almost moribund; indeed, he feared that the man would die then and there. Examination showed the case to be suffering from an enlarged heart, a fibroid liver and Bright's disease of the kidneys; the urine contained albumen, casts and fatty epithelia. We will here make the note that in our study of patients for the evidence of Bright's disease, not so much attention is paid whether the casts are fatty, waxy, hyaline, etc. Amyloid bodies are usually found in the urine when the kidney is first breaking down. *But we consider no case to be full-fledged Bright's disease, till albumen, casts and fatty epithelia are found.* There may be any one of these three, or any two. It is a common matter to find such cases which are just hovering along the margin of health and disease. This patient, desperate as his case was, went under the treat-to be further on described, recovered, and ought to have been here to-day for your examination. His heart, liver and kidneys are now doing healthy work.

Case 2.—About one year before his death, America's greatest laryngologist, Dr. Louis Elsberg, came under the care of the senior writer. His case was one of Bright's disease with all the signs as before enumerated. He was placed on rigid diet and would take no medicines. This regimen was followed out for several months and all of the morphological and chemical evidences of his disease disappeared from the urine, as testified to by an eminent pathologist of New York who, unknown to us, was following his case. He was allowed some lee way in his diet. The senior writer called one morning early at his office and found Dr. Elsberg at breakfast eating freely of all the starches and sugars that were placed before him. It was said to him, "Elsberg, if you persist in this reckless diet, you will kill yourself." The medical world knows how he died suddenly of pneumonia, perhaps Bright's disease of the lungs.

Case 3.—About four years ago, a millionaire was treated for two months for Bright's disease of the kidneys and lungs. At the expiration of that time, being improved and feeling *too poor* to continue under a physician's care, he undertook the direction of his case; ate wrongly, overworked and, while superintending some repairs in his house, was poisoned with sewer gas. The doctor was sent for again, but the good work that had been done for him in the two months of treatment was thoroughly undone, and he died.

Case 4.—June, 1880, the senior writer called to see his daughter-in-law in a non-professional way. She was within three weeks of her expected confinement of her first child, and to his horror he found her bloated, and on examination the urine proved to be heavily albuminous and contained casts and fatty epithelia. She was placed on a rigid diet, but labor came on in thirty-six hours and she was easily delivered of her child, which weighed but 3½ lbs. The placenta was covered with numerous elevations which, under the microscope, proved to be made up of plates of cholesterine. Two days after confinement, a steam fire engine came to the corner where she lived, and fastening to a hydrant commenced to pump. The noise worried her; entreaties to the engineer to desist were of no avail, and the poor woman went into convulsions. The senior writer arrived soon afterwards. She was kept under the influence of ether and was purged, but the convulsions did not cease till thirty-six hours had elapsed. She was then placed on a diet of beef-tea; no medicine. Later on broiled steaks were given her. The face was drawn to one side and her brain was very weak. The regimen was persisted in till the pathological evidences were removed from the urine, and since this time her diet has been mainly two-thirds animal and one-third vegetable. She has borne two more children, both of whom are much more rugged than the first.

Case 5.—Mrs. Blank went on treatment about four years ago, and on thorough examination was found to be sick with fibrous consumption, Bright's disease and a small fibroid tumor of the womb about the size of a man's fist. The evidences of Bright's disease disappeared, the fibroid tumor has gone, and we can say that she is cured of her fibrous consumption if there is such a thing as a cure of a chronic disease. She is now passing through the change of life and cannot be called a thoroughly well woman.

Case 6.—Three years ago, a young married woman came to our office and was found to be sick with Bright's disease of the kidneys—indeed, it is rare to find urine that contained as many casts, and of all kinds, as hers did. She was placed on treatment, and in one month's time the pathological evidences had nearly all disappeared. She persevered and is to-day enjoying good health.

Case 7.—The Rev. Dr. —, treasurer of a missionary society, came under our care about the same time as case 6. He also had Bright's disease. Was placed on treatment, though keeping at his work. His loss of flesh and strength at first greatly disturbed his wife, and it was hard work to make her believe that he should be held to the plans. After three months he took a vacation in Maine, still pursuing the plans of diet and medication, and in the fall came back to work. This case may be called *in progress*. His occupation is very laborious, tiring to the mind and full of worry. At the present he is under the plan of two-thirds animal and one-third vegetable food, eating one kind of meat and one kind of vegetable at a meal. June 18, 1889, his specimen presented no casts, no fatty epithelia and but a trace of albumen. Yet he tells us that he has never in his life worked so hard as the last month, and wonders that he holds on as well as he does.

Case 8.—In 1877, the senior writer saw in consultation a lady who was said to be dying of Bright's disease and whose attending physician wished blood to be transfused into her veins. She was as white as the sheets she lay between, was vomiting, and her urine confirmed the diagnosis made by her attendants. Before going back to Boston to get instruments to transfuse with, the senior writer sat down beside her and, taking a diet list from his pocket, asked her if she could eat the different foods named thereon. She said "no" till tripe was reached, when she said she could eat that. So ordered. On returning with instruments the next day it was found there was no need of operation, as the patient had retained the tripe and was better. In March, 1886, we were in this neighborhood operating on a case of uterine fibroid. The father expressed to the son a desire to see if this woman was alive, and on calling on her attending physician learned that she was, and on visiting her found a large, florid woman who said "that she was not much of a woman for work, but was far from being dead." It seems that she lived on tripe and milk warm from the cow, with other animal food, for over two years. By that time the evidences of Bright's disease had gradually and entirely disappeared from the urine.

Case 9.—Some years ago Miss A. B., æt. 24 years, was put on strict diet for her fibroid, which was of some years' standing; it was monolobed, interstitial, hard, invested the whole uterus and extended beyond the navel. She ate beef mostly with clear tea and coffee, and took a simple tonic. It was much against her appetite but, as she was a woman of few words and of a determined will, and had confidence in her medical adviser, she persevered until her uterine fibroid had all disappeared, and she remains to-day in perfect health. At the present, in handling these cases of uterine fibroids, both diet and galvanism are employed, the latter according to the rules laid down by the senior writer in 1871. No one can say that this case was cured by the menopause, as so many medical agnostics as to the curability of uterine fibroids by either galvanism or food or both, claim. *The history of the last eighteen years has proved conclusively that uterine fibroids are no longer opprobria medicorum.*

Case 10.—1882. Mr. H. L. H., a small, not robust man over 60 years of age, for many years had had difficult digestion, caused by overfeeding of vegetable food, so that the stomach was distended, walls infiltrated and hardened, causing a fibroid condition of the organ. When seen by the senior writer, he had been under treatment by Dr. Salisbury with hot water, chopped beef diet, stomachic medicines, etc. He ran down rapidly under the treatment, vomiting often and severely; throat sore and deglutition difficult, emaciation, weakness, some fever at times. He had fainting fits and appeared so moribund that his wife thought he would die in her arms. His hands, feet and legs were cold, circulation feeble, stomach distress great, mind clear and tractable. There were also complete dulness on percussion over the hepatic region; the abdomen empty, walls drawn toward spine, flat, hard, not tender. He took no food by the mouth but beef-tea by the rectum, was given nitric acid sponge baths, one teaspoonful to one pint of warm water, night and morning. Biniodide of mercury, $\frac{1}{16}$ gr., was given twice a day; 1 gr. of the sulphate of quinine was sprinkled once in two hours on the tongue, which was white and coated. Compress of linen cloth wet in the nitric acid bath was placed over the hepatic region and kept there till the skin was red. Though the vomiting continued for a little time, the effect of the rectal aliment told. The administration of mercury was followed by a diminution of the liver dulness. Soon he was able to take of the beef essence by the mouth; though he had no appetite, still he kept taking it, and by degrees increased the amount till the essence of 6 lbs. of beef daily was used by oral and rectal alimentation. Moving very carefully, the rectal administration was given up and the beef essence continued by the mouth. The case slowly improved, the urine showing less and less reaction of bile, the dulness of the liver running abreast, with the exception of a few days—that is, the dulness diminished with the diminution of bile in the urine. In the course of six weeks the appetite returned, former treatment was resumed, and he was cured and remains so, 1889.

Case 11.—In 1877, Mr. Luther Whiting Mason, of Boston, was sick of pretuberculosis, was cured and went to Japan and introduced successfully Western music. While there he was again sick; the physician (an American) made out a diagnosis of Bright's disease and told him he would die if he ate animal food alone; but he did eat animal food, was cured and is here to-day.

Case 12, eight years ago was also sick of Bright's disease of the kidneys and was cured by the treatment to-day indicated. He is here for your inspection.

Case 13 five years ago came under the same treatment for the same disease; has been cured, *i. e.*, the morphological and chemical evidences have disappeared from the urine and he attends to his work. He is present to-day.

Case 14.—In 1876, a middle-aged mother of a large family lay sick in bed of great grief at the loss of her last daughter, who had died from effects of the perforation of the vermiform appendix by an orange seed. There were present cardiac hypertrophy and insufficiency of the left auriculo-ventricular valve—severe attacks of angina pectoris when it seemed that death was near. The objective lesions other than those named were retroversion, engorgement, hardening, eversion of the os uteri, and behind the uterus four small, hard, marble-like tumors; very severe pain, sharp and stinging, in the pelvis mostly; profuse vaginal discharge, not bloody; menorrhagia. Added to this there was loss of appetite so complete that everything in the nature of food was loathed, even milk being repulsive; loss of flesh and strength, being unable to rise erect for ninety days; inability to lie on either side for most of the time; nausea; legs cold and sweaty up to the knees; oft-times great stomach distress, with wind colic; urine high-colored and of a rank smell as if putrid; bowels constipated; a terrible feeling of nervous restlessness, causing her to move her feet rapidly up and down in the bed; visitors coming and assuring her by their looks and actions that she was about to die. Added to this there was cancer in her family, her father having died of cancer of the stomach and her maternal grandmother of cancer of the breast. She was put on general and local treatment, and it was faithfully carried out in connection with good nursing; but she gradually grew worse, until at the expiration of three months the symptoms were so alarming that the senior writer was obliged to take strong and decisive grounds, and to tell her, "You must eat, or die of cancer of the womb; make up your mind to one or the other." She decided to live and to eat; eating against her appetite, but with her intellect and reason and the advice of her medical attendant. She began with tenderloin steak, broiled and cut up very fine. The most she could take at first was a quantity represented by two teaspoonfuls. These she swallowed by a desperate effort, her stomach rising against it, She was so fed every four hours. Even after she had fed in this manner for weeks she felt she would rather die almost than eat, but battled against appetite by sheer force of will. The only way she could get down the beef was by swallowing one mouthful of lager beer, which was the only article which did not go against the stomach. The quantity of meat was increased gradually and she was fed two months against the appetite. The nausea, however, left in about three or four weeks, and at this time she was able to move some, and was placed in a Cutter invalid chair part of the day. After two months of feeding she was taken carefully to the seashore, and there she began to get an appetite, but it took one year before she could walk 500 feet. This case did not fear death, but the form. The results obtained by food are in her case:

1. Heart normal in size.
2. Valvular insufficiency hardly perceivable.
3. Angina pectoris gone.
4. Uterine disease relieved; tumors disappeared, uterus mobile, discharges normal.
5. Urine clear as champagne, 1015–1020 specific gravity; no odor, no deposit on cooling.
6. Restoration to active duties as housekeeper and mother of the family.

No medicine was given after the food treatment, save Hoffmann's anodyne when she had palpitation of the heart and suffocation of breath.

When we state that this case is here to-day, we think our hearers will admit that we have a living argument that we cannot ignore, as to the curability of chronically diseased tissues.

As the time is short we will give no more histories, and proceed to the closing section of this contribution, to wit:

STATEMENT OF PRINCIPLES OF THERAPEUTICS.

1. All cases of serious chronic disease which come under our care are commonly placed on a rigid diet of beef taken from the top of the round, freed either by hand or by the use of the American or Enterprise choppers from all fat and connective tissue. The resultant is the pure lean muscular fibre, which is moulded by the use of knife and fork and broiled, served to the patient on a hot water plate and seasoned with pepper, butter and salt. In some cases, especially of fatty degeneration, butter not allowed. Too much care cannot be given in the selection of the beef and in its preparation, and we refer you to the No. 2 in bibliography appended for further directions. Besides the beef, clear tea and coffee are allowed. As relishes, Worcestershire sauce, lemon and celery can be taken.

Beef is selected as a prime feeder, as it has been proved by long experience and observation to be the easiest digested, the soonest digested, and when digested, an aliment which nourishes all the organs and tissues, as it contains all of the chemical elements of the body.

In some cases, as has been noted, even beef freed from the connective fibrous tissue could not be used, and recourse was had to beef extracts or beef-tea. At present we prefer Johnston's beef extract, but gladly note that other preparations are being pushed to the point of the "best." The great fault of many of the "extracts" now made is the presence of the glue or fibrous tissues, which ferment.

2. All starches and sugars are excluded from the rigid diet, as they contain only carbon, hydrogen and oxygen, are hard of digestion, and ferment into carbonic acid gas, alcohol and water, and if time is given into vinegar. It is our experience and that of others that these fermentative changes are highly damaging to the body tissues and have a great deal to do with the causation of chronically diseased organs. But this is not a paper on etiology. Those that wish for more information may get it by studying the articles as enumerated in the bibliography appended.

3. As the patient improves other foods may be brought gradually into the diet. Perhaps the first principle of dietetics is: the fewer articles of food eaten, the better. Nerve force in digestion is thereby saved. In these days of hard work and too fast living, the busy man can do well if he eats but one meat and one vegetable at a meal. If he has plenty of time to use in idleness that is another matter; then he may live to eat and vegetate while doing so.

4. Attention must be paid to that great gland, *the skin*, by giving the whole body daily a sponge bath of ammonia and water, and once a week a soap and water bath.

5. Passive exercise by rubbing and massage must be daily taken. A great amount of force can be placed in a sick person by the rubbing of him or her by a strong, composed, healthy man or woman. The well person may place one hand on the forehead and the other on the ankle or thigh of the sick one. When the patient is improving, he may receive strength by riding on a barebacked horse. Still later on active exercise must be taken, as walking.

Riding in an easy carriage must also be used as a means of passive exercise.

6. The patient's underclothing should be changed night and morning, and care must be taken by the physician to see that the patient is clad warmly enough. Some people do not know what is the proper amount of clothes to wear.

7. *The morale of the patient must be attended to.* We are often asked, "How do you make your patients eat beef? I cannot make mine." The reply is simply, "We make them." Those that come to us are usually sick enough to care to do most anything to get well. Indeed, they have been discouraged by the advice of friends and others that they could not be cured. Giving such a one the history of those that have been cured, even more diseased than himself, and telling him that he is sick with a disease that has been commonly called incurable, that it is curable, and that if he will join hands with us and work together for the desired end, then if the case consents, good can be accomplished. It is never right to say that you are going to surely cure any patient; we are finite; death is certain. Instead let him know of his desperate condition *and* what his chances are. A case of chronic disease should go on treatment for from six months to two years. He should pay by the month and in advance. This ensures better work on the part of the patient, as he wants his money's worth.

Morphological examinations of blood, sputum, fæces and urine, combined with the chemical tests, must be made three or four times a week. The urine must be brought to flowing at a specific gravity of 1014–1020, free from odor, bile or deposits on cooling.

If the patient deviates from his diet, or overworks, or worries, or plays too hard, the results will be seen in the urine. The fæces will indicate to the practitioner whether the food is well digested or not, and whether the patient is living to the plans or not. If the sick one becomes depressed, then is the time for the physician to carry him over the slough of despond.

8. *Medicines so-called.* With medicines alone, and the patient eating recklessly and living imprudently, no case of chronic disease may be expected to be cured. With no medicine, and with

careful attention to the diet and mode of life, chronic disease can be cured. But combining the greatest and best knowledge of foods, drugs and modes of life with a thorough information of the human body in health and disease, so that one can tell whether the case is improving or not—we say, combine these things with good hard common sense, go at the case with all the force and energy you have to cure, and we will predict that you will be agreeably disappointed by restoring a larger percentage to health than has been your ordinary practice.

When the heart is weak and beating fast, do not give antipyrin or caffein to depress it, but build up the system and tone the heart's action with salicin, strychnine, strophanthin or digitalin; salicin may be taken *ad libitum*. A non-sugary pepsin and pancreatin preparation is usually indicated.

A combination of the non-poisonous fluid extracts may be well used. Biniodide of mercury $\frac{1}{16}$ gr. may be given without fear of salivation. The English iodide of potash for gravel of the lungs, blood and kidneys. in small doses, is well prescribed.

Give no medicines that effervesce or have sugar in them. If you think this is *idle talk*, after getting a patient into good running order, with every gland doing its work easily and well, and nature has been allowed a chance to lay down healthy tissues in the place of the unhealthy, give that patient a little sugar in his tea or coffee, or prescribe Fellows' syrup of hypophosphites, or let him drink of some of the effervescing mixtures, and you will find as we have found, that your case will be upset and good work undone.

Finally, as a cheap and easily obtained medicine, the taking of which forms no bad habits and which is at times more valuable than all drugs put together, we recommend the drinking of one pint of hot water at a temperature of from 100° to 150°, one hour before meals and on retiring. Such drinking dissolves concretions, washes out the stomach, liver, kidneys and bladder, and will lubricate the rusty, creaking machine.

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A PENAL RULE OF OUR COMMON SCHOOLS, AND SOME OF ITS EFFECTS.

Read in the Section of Diseases of Children at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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"Deliver me from the oppression of man."—*Ps. 119-134.*

> "'Tis granted, and no plainer truth appears,
> Our most important are our earliest years:
> The mind, impressible and soft, with ease
> Imbibes and copies what she hears and sees,
> And through life's labyrinth holds fast the clue
> That education gives her, false or true."
>
> —*Cowper.*

Oppression in any form, at any age of human life, and under all circumstances, is revolting to a true American; but when it tends to lower the morals and compromise the health, then it partakes of tyranny, and this forces open rebellion. Oppression begets oppressors, and freedom makes freemen. Rules and laws are necessary to govern and control the unruly, but even when applied to the worst criminals tyranny is revolting to the finer feelings of mankind.

The last two years has brought under my personal observation the practical effects of a *penal rule* that has been, and is, in force in our *common schools*, the tendency of which is to lower the morals, encourage filthy habits and, sooner or later, compromise the health, as well as to endanger the lives of the scholars.

As I desire to be charitable to all mankind, I impute the existence and enforcement of said rule to ignorance, and not to wickedness of the teacher's heart. But this does not lessen the objections or dangers, or free the teachers from a just criticism. The best methods of lighting, heating, ventilating, with probably everything else relating to the hygiene of our common schools, have been discussed by the philanthropists of our country from its birth to the present. Town, city, county, State and national educational societies have probably weighed every phase of the subject as to the best method of teaching and governing the schools of our country.

The above being admitted, it may appear to the superficial thinker in and out of the teaching clan that I am stepping upon slippery ground, or attempting more than duty demands. Of one thing rest assured, I will not deal in supparasitation, as the subject is of too serious a nature to those who are defenseless, as against those who should know better. Four cases have come directly under my observation the past winter; two of them resulted in filthy and wet clothing; the other two were not so fortunate as to stop at this point—in fact the symptoms in one of the latter were of a serious character. In getting the history of the two last I found that our school teachers had the following *penal rule*, viz: "All children going out in time of the school session were kept in one-third of the recess." This would deduct five minutes from the fifteen, the latter being the full time for recess. It is certainly well known to all those that came up through childhood that a penalty like this, when applied to small children in particular, is, to state it mildly, wrong. They want their play-time with their fellows, and that they may obtain it, will suffer greatly.

Man, to have his fancied pleasures of an ephemeral character that will bring him pain on the morrow, will even risk the loss of eternal happiness, better stated by the poet:

> "It is sad
> To think how few our pleasures really are,
> And for the which we risk eternal good."

It is a common saying that cleanliness is next to godliness. Admit this as a truth, then children with their clothing soiled by their urine or fæces are a long distance from godliness. Youth is the time to get fixed habits; as some philosopher has stated it, "As the twig is bent, so the tree inclines." It goes as a saying that habit is second nature, as is demonstrated in the filthy habits of those who use tobacco. When they first commenced the use of the weed it sickened, vomited and made the person dizzy; but by persisting against its warnings the system tolerates, and finally appears to demand it, so that it gives mental and imaginary physical pain to do without it; as in this habit, so in others. The calls or promptings of nature should be responded to immediately; these are facts that cannot be controverted by any intelligent mind, the force of which to the educated physician is so self-evident that the above penal rule in our common schools strikes him as inhuman.

In clinically studying the causes of constipation and costiveness I find two leading factors: 1. Constipation is more often found in the female. 2. That it dates from youth. Here again we have another example that we are creatures of habit, as I have had my patients to frankly inform me that, when young, they were prevented from attending to the warnings of nature by reason of company or other surrounding circumstance, until the habit was formed; here false modesty was to blame. Only a few days ago I was consulted by a lady who informed me that she rarely had a passage from her bowels oftener than once a week, and she was then suffering from fæcal toxæmia, *e. g.*, headache, dizziness, bad taste, stupor, drowsiness, low spirits, etc. In causation of her constipation it was the same old tale, "false modesty when a youth." This is only one of the many that could be given. Medical men know that urine retained any considerable length of time in the bladder becomes alkaline. This is abnormal, although it is frequently alkaline shortly after meals, which may account for the desire to urinate frequently after eating, or the converse. Unhealthy urine in the bladder first acts as a local irritant upon the coats; continuing to accumulate, it distends the bladder to the extent that the muscular contractility is destroyed, the further flow from the ureters and kidneys prevented, and, by the pressure of the over-distended bladder, contiguous organs interfered with in action and compromised by displacement, *e. g.*, cystitis first, and inflammation of continuous and contiguous parts, uræmic toxæmia, calculi, saculation of the walls of the bladder, etc. The child, to have its play-time, will resist the calls of nature to the uttermost. In time this will weaken and then paralyze the bladder and bowels, and the habit, once formed, is very difficult to overcome. This will in a measure account for many of our cases of headache and general bad feeling, malaise, or, popularly called, blues, that so often afflict some persons.

In some temperaments it will prove a greater source of annoyance than in others, as the bilious temperament would suffer more from the interference with the bowels, while the nervous temperament would be more often affected by interference with the action of the bladder; both would make pessimists and melancholics, particularly the first-named.

The human system will not tolerate any interference with her laws without rebelling, and the retention of excrementitial substances for any unreasonable length of time first works a local and then a general injury, as they not only become foreign substances, but general poisons, and the parts and system become correspondingly injured The child resists the calls of nature from day to day as long as possible, by reason of the penalty, and he finally accomplishes the feat, or the discharges pass off into his clothing; the latter is likely to get the child a scolding, if not a whipping, when he returns home. This is altogether wrong; if any one deserves the punishment, it is certainly the teacher. The home punishment adds fuel to the flame by forcing the child to bring more will-power to bear in resisting nature's demands, and in succeeding he soils the inside. Again habit becomes second nature. What to the child was at first filth, at which his higher susceptibilities or moral nature revolted, becomes in time a matter of course, or don't care. If cleanliness of person is part of the moral code, then the person's morals are lowered. Moral is derived from the Latin *moralis*, from *mos*, *moris*, manner, custom, habit, way of life, conduct.

I do not deny the teachers the right—in fact I believe it to be their duty—to adopt rules to govern their schools, but I do deny them the right to adopt any rule that leads to filthy habits, or that is likely to entail disease, ever so remotely, upon their scholars. It has been my province to meet with many children who were afflicted with an irresistible desire to urinate every little while, the irritant residing within the bladder, probably acrid urine, or without the bladder by reflex or sympathetic action from the fæces or worms, etc. To compel such children to obey such a rule is brutal. The rule itself goes for naught; it is the penalty that does the mischief, as it is this that causes the child to resist nature's calls until the damage has been accomplished. To rob the little one of five minutes of his play-time is a calamity to him that will cause him to endure considerable physical suffering. One of our learned Supreme Judges of the United States Supreme Court declared, a short time ago, that we had "too many laws." If this is true of our country, it is also undoubtedly true when applied to our common schools, one that I am certain of that should never have had more than a passing thought, like the flitting of a butterfly through the air, to condemn it. If tyranny makes tyrants, this penal rule adds other factors, such as filthy bodies without and within, also sowing the seeds of disease sooner or later. Discipline in the government of our schools is one thing, and inhumanity is another.

The overfilling of the bladder or excessive distention of the bowels will, in the female, tend to develop versions, prolapses and obliquities of the uterus, vesicoceles and rectoceles, and in the male and female alike, hæmorrhoids, etc. A simple allusion, to the educated physician, to the probabilities and possibilities of the derangements that might result directly and indirectly, is all that is necessary; therefore I shall not name all.

A. A., a boy aged 8 years, returned from school suffering with pain in the region of his bladder and lower bowel, and informed his mother that the teacher would not permit him to go out to the water-closet, although he had asked it. I was summoned to the case at once, and upon carefully interrogating the little fellow he reiterated his statements as made to his mother, with this additional declaration, that the teacher finally told him, after repeatedly asking her for permission to go out and informing her why he wanted to, that he might go, but that he would lose recess and would have to stay in. To him five minutes meant the entire time and he resisted nature's call until recess was given; then he went home, suffering as stated. His parents were very angry, and they could hardly be induced to send their child again to school, even after his recovery.

Laura P., aged about 10 years, large for her age and fleshy. She reported that she requested the teacher, immediately after the morning session (9 A. M.) opened, to let her go to the water-closet, but was refused. Shortly after a severe pain attacked her in the region of her bladder, that forced her to cry. She reported to me and to her parents that she repeatedly asked to go out, but was denied, and was forced to remain in until noon. Her sufferings were so great that I was summoned immediately upon her return home. I found her complaining of great pain in and over the region of the bladder, crying and very nervous. She informed me that she had not passed any urine since early morning, and was not certain that she had that day. Over the region of the bladder she was remarkably tender, pulse 120, small, sharp and hard. Her countenance gave evidence of great suffering. She was quite nervous and could not tolerate the least pressure over the lower part of her abdomen. This case was confined to bed several days, but finally appeared to make a full and complete recovery.

The following case occurred to Dr. H. R. Guthrie, and he kindly furnished me the following synopsis: L. F., aged 8 years. Nervous temperament, which was severely excited from not being allowed, by the rules of the school, to go to the water-closet to answer the calls of nature; had an irritable bladder. When called to see her, found her threatened with spasms. Her nervous system was disturbed for a number of days, until, in fact, the bladder regained its accustomed tone. The same condition has shown itself two or three times, but less severely.

Prof. J. A. Larrabee, of Louisville, Ky., says in one of his articles[1] on diseases of the schoolroom: "One-third of the lives of the American people is passed in the schools, and this third is the time when the physical system is peculiarly disposed to contract disease." This being granted, then the preventive and preservative laws of health should not only be studied by the teacher and scholar alike (age and capacity considered), but should be daily practiced. Where the child is too young to understand the force of language, apply the Kindergarten method, so as to simplify and practically apply the object lessons. No rule should ever be adopted that will have the least tendency to impair the physical or moral health of the child, remembering that healthy adults presupposes healthy children. The school-house and everything pertaining to it, within, without and around and about it, should be as inviting to the mind and as salubrious to the body as possible, that health of the body and mind shall be improved, keeping the body at all times and under all circumstances in advance of the mind; and I fully agree with Prof. Larrabee that medical inspectors should be appointed and have entire control of our public schools in everything that relates to the health of the scholars.

The argument adduced in favor of this *penal* rule is, that without this penalty small children will make the calls of nature a pretext to run out-of-doors to play, and the penalty, in a great measure, prevents this.

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[1] Boston Herald.

This is undoubtedly a very lame argument to bring forward in favor of such an inhuman rule. Better let them run out and play and work off some of the surplus steam, exercise their muscles and get fresh air; they no doubt need it; the system calls for it, and should be allowed to have it. After having it they will return to the schoolroom refreshed, and my word for it, they will make better adults, physically and mentally. Rigid discipline and the best method of cramming the child with the *crudities* of *book-knowledge* is placed paramount to everything else—the body not given more than a passing thought with some of our teachers. The Roman mother first educated her child how to develop the body, making the mind of secondary importance; while we of our day force the mind and let the body take care of itself. Many of our teachers pander to the foolish vanity of the parents by crowding and cramming the mind, to enable the parents to boast of the wonderful precocity of their children, that they have the smartest children in their classes, and, if possible, in the school, as cases of this kind have come under my observation. When these wise children are fully weighed, two things are found to exist: an impaired body and the knowledge of the monkey and parrot, that will serve and prove of little value in the race of life or bread-making. They are without individuality, originality or true mental capacity; to my finite mind this is not education. Did you ever know of any one so crowded and crammed with the crudities of our school-books who ever made any great mark in the world's history, if they lived long enough to have a fair and full trial? They more often die prematurely, as they have sapped and drained the vital vigor that they possessed when they commenced to attend school, growth of body and mental labor preventing any surplus from being stored up for future use. It is about time that medical men should cry out with a loud voice against this and every other evil that endangers the purity of the body, as well as its health. God, the family, society and the State demand it, as you cannot have good, sound and active minds in other than good, sound bodies.

The following excerpts were clipped from the *Daily Globe-Democrat*, St. Louis, Mo., and as they are germane to the subject under discussion I beg permission to present and read them in connection with and as part of this paper:

"WILLIE BERMEL'S DEATH.—PECULIAR AND PATHETIC FACTS OF IMPORTANCE TO SCHOOL TEACHERS.—The death of Willie J. Bermel, aged 6 years and 6 months, by cerebral meningitis, Sunday evening at the home of his parents, 824 Soulard street, according to the general circumstances attending the case, is attended with a great deal of interest to parents having children in the public schools.

"The story, as told by the parents, Mr. and Mrs. John Bermel, and their neighbors, is pathetic, though startling in a degree. They say: 'Willie was sent to room No. 17 of the Carroll school, Tenth and Carroll streets. He was in the best of health, possibly excepting an ailment quite incident to childhood, and which necessitated his leaving the schoolroom more frequently than were he not so afflicted. On a few occasions, however, the teacher refused him leave. In consequence he was a victim of physiological necessities. As he had some distance to walk home and the weather was cold, a spell of sickness resulted. That was four weeks since. Dr. John E. Faber was called in. Willie recovered shortly. The doctor gave emphatic orders that under no circumstances should Willie be retained in school when he requested a few minutes' absence. Word was transmitted to the teacher in accordance, but a number of times he was detained. Last Wednesday, when it was cold, he returned with his clothes frozen. He was chilled through. We warmed him and put on dry clothing. Then he grew sick and was tucked in bed. He fell into a state of semi-consciousness in a few hours. His sufferings grew fearful. He would almost continually raise his little hand, and snapping his fingers, schoolboy fashion, would plead so hard, 'O, I must go out—I can't help it—please let me go.' This plea, repeated again and again, was the sole burden of his mind; but Sunday morning he grew weaker and his pleading fainter and fainter, until he sank into death with his lips forming with his last breath the faint request, 'let me go out.''

"Dr. Faber was seen by the reporter and said: 'I am not quite certain whether it is a case of cerebral meningitis or cerebro-spinal meningitis, but think it was the former. Whichever it was, it was primarily induced by congestion, due to undue retention by delicate organs, as these cases always are. When I went to attend the boy last week I found him suffering from congestive symptoms. He was not then out of his mind, but he soon fell into a comatose condition. I saw that there were febrile traces, but gave no quinine, as there was no use trying to do other than keep him quiet. I had attended him a few weeks previous. Then he was suffering from congestive symptoms and I treated him for cerebral congestion, giving him a dose of calomel. The parents told me of the trouble at school, and I gave imperative instructions that under no consideration should he be refused perfect liberty. Whether they did refuse, I do not know more than what the parents told me. I can not say positively that confining him in school unduly was the cause of his death. I would hesitate to say if I did, because I would be loath to single out any one teacher to be publicly attacked. But one thing I will say is that I have a great many similar cases produced by that error that is allowed to be practiced in public schools. All these cases you hear of of death by cerebral troubles among children are due to the practice of trying to discipline a child's nature beyond reason. The great trouble is that the majority of our teachers are young women, who are determined to blindly preserve discipline. They neither use judgment, nor could they determine. It is a great argument against employing the feminine sex in that capacity. The practice is brutal, but it is general throughout the city. Discipline is well, but discipline had better have been thrown overboard altogether than that even one human life should have been lost. Death in this case, it is possible, may have resulted from something else—high feeding incident to Christmas. I should not care to absolutely attribute it to the most probable cause.'

"The neighbors of the afflicted family corroborate their statements in full, and complain loudly that their own children are compelled to suffer similarly. On the morning when it is said Willie contracted his fatal cold they state that recess had been abolished, and still the child was refused egress.

"Dr. Faber hesitated somewhat in granting a death certificate, but was counseled by a colleague that it would be impossible to arrive at the cause of death, even by autopsy, and the permit was granted. An effort was made to see the teacher concerned last night, but was futile, owing to the lateness of the hour."

Willie Bermel evidently died from *uræmic poisoning*, the result of this same penal rule. Dr. Faber is trying to carry water on both shoulders. His intention is to screen the teacher, and in doing so he places himself in an unenviable position with those who fully understand all the facts.

"PUBLIC SCHOOL DISCIPLINE.—A MOTHER AND EX-TEACHER SAYS IT IS BRUTAL AND SUGGESTS A REMEDY.—The pathetic circumstances attending the death of little Willie Bermel recalls some experiences in my own life that may not be uninteresting, but I would first make the observation, founded upon my own experiences as a mother and an earnest student of child nature, that the present system of discipline in the public schools is not only unreasonable, but inhuman. There are many teachers in the public schools who have no right to be there; they 'despise children.' I have heard them say it. They have no sympathy for them and no understanding of their dispositions and natures. I maintain that love is the only disciplinarian, and a teacher who can not govern her pupils through its influence should have nothing to do with children. The absurdity of trying to control several hundred children of varying dispositions and temperaments by one iron method is too palpable for dispute.

"Several years ago I taught a boys' class in a male academy. The principal was a kind man, and earnestly strove to win the affections of his pupils, but he said, 'Now, I'm afraid you will find these boys refractory; my former lady teachers complained of them, and they were compelled to use the strictest discipline. One especially—mentioning his name—has given a great deal of trouble, and is perfectly irrepressible.' 'I will undertake them,' I replied, 'if you will kindly allow me to carry out my own ideas of discipline'—to which he assented.

"After the first day I had no trouble. I made companions, friends of my boys. I entered into their little pleasures and pursuits with interest, for I loved them and was proud of them, and I never had cause to regret my undertaking. My 'irrepressible' was a bright, intelligent boy of 12 years, nervous, restless, and with a keen inquiring mind. My prescription for him was simply, 'Charlie, I see that you want an escape valve; now go out in the yard and walk up and down briskly as many times as you are years old; that will be twelve; then come in, and I think you will be able to study.' My prescription never failed; he needed some outlet for his overflowing vital forces, and the walk furnished it. He was the brightest, dearest boy in my class, fun-loving, as all boys are and ought to be, but loving, manly and true, and he never gave me a moment's vexation. A few years later, having left the academy, I tried to get a situation to teach in the public schools, because it was the work I loved and wanted to do, but failed because I had been educated in a Baltimore seminary, from which I graduated with honor, and because I had not 'gone through' the Normal School in St. Louis. Red tape proscribed me, and the field I longed to enter was reserved for a young, inexperienced girl, who felt 'children a bore,' and only taught for the money. Over her scholastic capacity I draw the veil of charity. It made no difference; she had friends with '*inflooence*' on the School Board, and the way for her was open. I would here add that if I were offered now a situation to teach in the public schools I should decline it under the present system of tyrannous discipline, which I consider an outrage upon the rights of helpless children and subversive of the very ends sought to be attained. I went through the same exasperating ordeal when my own little ones went to school, and I believe that half the weaknesses and ailments of children are due to that restriction. I shall have all the public school teachers about my ears for writing this, to say nothing of the indignation of the august and sacred 'board,' but I don't care; it is the truth, as many mothers can testify. When women are chosen for teachers who understand and love children, who have kindly natures and affectionate hearts, then the high and mighty potentates who inaugurated and maintain the present system of discipline will find fewer thorns in their tutelary path, and give more satisfaction to the tax-paying parents who support the educational institutions. A LOVER OF CHILDREN."

This lady, signed "A Lover of Children," makes some happy hits. In the matter of employing teachers, too often teachers are employed who are physical wrecks, this being done from a charitable standpoint. I have known teachers in our common schools who were expectorating large quantities of tubercle every day—spit it upon the floor to dry, of course, and, when dry, to be driven into the air of the schoolroom by every movement of the scholars and every puff of the air. Teachers should be sound in body and mind, and should be employed because they love the work and love children.

COUGH IN ITS RELATIONS TO MORBID STATES OF THE NASAL PASSAGES.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY J. E. SCHADLE, M.D.,
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The syptomatology of morbid processes seldom presents a more perplexing subject for analysis as to its primary cause than that of cough. A chronic cough which will not yield to ordinary methods of treatment and whose ultimate significance is sometimes difficult to understand, is calculated as much as any other single condition to establish in the mind of the sufferer extreme anxiety. This is not strange when it is remembered that we have in it one of the premonitory symptoms of consumption.

It is only from a comprehensive knowledge of all its pathological connections that reliable differentiations can be made in consideration of the primary sources of cough. The peculiar phenomenal sounds characterizing some varieties of cough may aid materially in determining the nature and location of the disease on which its origin depends; but a correct diagnosis from such a basis of investigation cannot always be relied upon; a more extensive research is required.

A series of observations, strengthened by those of other laryngologists, confirms me in the conviction that not enough attention is given to interrogations of the nasal passages when cases of cough present themselves. An important interest belongs to this subject, especially in its practical relations to morbid states of the nasal cavities.

Teachers of rational medicine seem to lose sight of the essential office of the nose as it presides over the act of respiration and that an abnormality of its structures may either directly or sympathetically interrupt the physiological processes of the organs which come under its domain. Experience bears me out in the statement that in conditions where specific organic changes of the lungs are not manifest, a cough spasmodic in character, accompanied or not by temporary alterations of the voice or of the function of respiration, is frequently, if not invariably, of nasal origin. To practically demonstrate the importance of this statement, I will state the histories of several cases which certainly possess the average amount of interest.

Case 1.—Cough due to posterior hypertrophies of the inferior turbinated bones.

F, a young woman, eighteen years of age, came to me ten months ago, for advice concerning a distressing cough which had been troubling her for more than nine years. She stated that during this time all sorts of cough mixtures had been prescribed by different physicians but without affording her permanent relief. The cough was paroxysmal and varied but little during any part of the year. If anything exerted an influence, she thought it was a moist condition of the atmosphere as at such times the seizures were harder and more prolonged. Unattended by expectorations the cough was dry and irritative and came on most intensely at the hours of retiring and rising, particularly the former. Sometimes after assuming the recumbent posture it became more severe, the attacks usually lasting an hour or more. The voice, especially in the evenings, was hoarse.

As to the subjective features of her complaint, she directed my attention to the laryngo-bronchial region where the sensation giving rise to the cough was located. It was a feeling of pronounced irritation resembling very much that produced by the presence of a foreign body requiring expulsion from these parts. In connection with this expression of the disorder, a stopped-up feeling of the nasal chambers was complained of as producing considerable discomfort.

Noticeable among other symptoms was a choreaform disturbance of some of the muscles of the face, which became more pronounced in their convulsive movements under the influence of fear, such as is occasionally created by the presence of surgical instruments used in an examination. The neurotic diathesis evidently was inherited from the father who was himself afflicted with nervous irritability, shown by his uncommon susceptibility to influences peculiar to such a condition. An undue amount of hyperæsthesia was present in the parts as was indicated by sneezing and coughing when pressure was exerted by the operating instrument.

The entire intra-nasal mucous lining was catarrhally affected. It was intensely red and threw off great quantities of serous fluid, thus occasioning a troublesome symptom. The mucous membrane was also very sensitive to the action of local causes of irritation. The use of a probe over its surface soon was followed by so-called erectile swellings of the parts touched.

Posterior inspection of the nasal fossæ revealed neoplastic changes of the inferior turbinated bones. The redundant tissue which occupied about one-third of the length of each bone consisted of soft, irregularly shaped growths, the size of an ordinary mulberry. The lumen of the lower meatus was considerably lessened by the condition. The larynx presented no abnormal changes apart from a deep redness and marked infiltration of the subglottic mucous membrane, which condition was limited to this region. Applications of a solution of chloride of zinc to the affected subglottic tissues and a correction of the deformed septum with a Bosworth saw soon yielded entire relief.

The sensitive nervous organization of the patient and the marked morbid changes discovered in the nasal chambers, furnished a clew to the cause of the cough.

The posterior hypertrophies were removed with a snare and the rhinal inflammation reduced by the use simply of antiseptic sprays. To overcome the nervous excitability, the remedies —arsenic, zinc, quinine and strychnine were employed. Under the above management the cough soon disappeared and has remained so ever since.

Case 2.—Cough due to a deformity of the septum narium.

During the autumn of 1888, a man, forty-three years of age, was sent to me for examination on account of a cough which, he said, fifteen years before had come on without an apparent reason, and which year by year had gradually grown worse. He gave no evidences of tubercular disease either by his own or that of his family history. Generally he was in the enjoyment of good health and regularly followed his vocation as an accountant for a railroad corporation. The cough was spasmodic and often quite violent. Fatigue and active physical exercise had a tendency to bring on the attacks. Unlike the case just cited he was never troubled with the cough after having retired for the night. Usually in the mornings whilst in the act of dressing himself he had a seizure. One of the initial symptoms of a paroxysm was the sensation of a worm crawling through the tissues of the larynx. He also complained of occlusion of the left nostril, which on examination was found to contain a tumor of the septum narium consisting of cartilage and bone. The right nasal chamber, the post-nasal space and the pharynx did not seem to suffer from the obstructed state of the left side of the nose as is commonly the case under such circumstances. Aside from this, the family history contained nothing of special importance.

An examination of the larynx showed thickening of the mucous membrane of the interarytenoid space. The aro and naso-pharyngeal mucous membrane was but slightly altered in its normal appearances. A few chronically enlarged follicles surrounded here and there by hyperæmic patches were observable.

Case 3.—Cough due to chronic nasal catarrh occurring in a subject predisposed to consumption. About one year ago a woman, 25 years of age, medium size, light complexion, came to me through the advice of her medical attendant, complaining of a harassing cough which began six months previously. The cough was accompanied by muco-purulent expectorations. Decided anæmia and loss of flesh were showing themselves; the appetite was poor, the bowels irregular and the menstrual function deranged. In connection with the symptoms of cough she also complained of an excessive chronic discharge from the nasal passages, which had been troubling her for a few months prior to the onset of the cough. The cause of the rhinal disorder she attributed to a neglected cold in the head. The family history was very discouraging, as she stated that one parent and several sisters had died from tubercular disease. A physical examination of the chest gave no evidence of a co-existing lung disease. By the use of the laryngoscope a catarrhal change of the larynx, such as is sometimes initiative of tubercular laryngitis, was discovered. The mucous membrane was hyperæmic; the arytenoid cartilages were swollen and intensely red; the vocal bands sympathized but little with the morbid process; beyond them in the trachea no change of structure was perceptible; the voice was impaired in both quality and strength; some pain was experienced on swallowing water or food. The rhinoscope brought to light a well-seated chronic rhinal inflammation involving the whole membrane covering the intra-nasal fossæ. The mucous membrane was purple-red and swollen, and was actively engaged in throwing off the offensive secretions of which mention has been made. Whilst a quantity of purulent material was blown from the nose, much of it found its way into the throat from behind the palate. It at first seemed as though the patient was suffering from laryngeal phthisis, an opinion entertained by her former physician; but as there were no signs indicating pulmonary trouble, it appeared clear that the cough and laryngitis were secondary elements in the case; they were a consequence of the pre-existing catarrhal disease of the nasal passages.

The treatment pursued with a view to eradicate the cough consisted in an attempt to remove the catarrhal affection of the nose and throat, and to tone up the general system of the patient. The former end was accomplished by the local applications of antiseptic and alterative agents, the latter by the administration of the syrup of the iodide of iron in full doses. As soon as an impression both locally and constitutionally was made the cough ceased.

Repeated observations on the peculiar behavior of nasal disorders add testimony to the fact that those diseases of the nose which predispose to the establishment of reflex disturbances are the morbid processes which give rise to cough when it is thus pathologically related.

A study of reflex neuroses during recent years has developed a fertile field for the investigation of not a few phenomenal symptoms of disease whose etiology hitherto remained obscure. It is nowadays a conclusive observation that with a knowledge of nasal reflexes in their pathological aspects a way has been opened for a better understanding of the cause and treatment of a certain form of so-called nervous headache. An inquiry into the state of the nose not infrequently reveals a contributory factor to the production of spasmodic asthma, whose cure becomes expedient by a removal of the nasal difficulty.

The extraordinary reflex symptoms of hay fever which give character to the affection, it is now well known, have their focus of origin seated in a morbid state of the intra-nasal cavities. Local choreaform movements of the muscles of the soft palate, of the face, or of the larynx, are sometimes traceable to intra-nasal irritation.

The "pathological nasal reflexes" described by Dr. John N. Mackenzie are thus seen to have a special importance attached to themselves, which I am sure should merit the attention of all intelligent physicians. To this category belongs a spasmodic cough whose cause is located in a morbid state of the nasal passages, and whose existence remains permanent until the intra-nasal lesion is got rid of.

Through the sympathetic nervous influence exerted by the presence of diseases of the cavities of the nose more or less irritation of the peripheral nervous filaments of the laryngo-bronchial mucous membrane takes place, whereby cough is induced.

"Recurrent laryngitis" attended by cough Dr. Ingalls attributes to a coexisting nasal catarrh or obstruction, and maintains that a cure is performed by giving proper attention to the treatment of the nasal passages.

In the classical writings of Dr. John N. Mackenzie we find it said that "various neuralgic conditions of the branches of the fifth and other nerves —cough, asthma, vertigo, nightmare, diseased states of the eye, ear, larynx and bronchial tubes —have been mitigated or known to disappear with a cure of the nasal affection."

Paresis of the vaso-motor blood-vessels of the nasal mucous membrane, resulting from neglected attacks of acute rhinitis or local irritation from a deformed septum or morbid growth plays unquestionably a conspicuous part in bringing about secondary effects of the larynx or bronchial tubes accompanied with cough and other serious consequences.

Referring to this subject a few years ago, Dr. Bosworth said: "We often regard a laryngitis and bronchitis as the extension of a catarrhal process from the nasal membrane. That such is the case I do not believe. There is no continuity of tissue. That this is the true view is well shown by the fact of our utter failure for many years to treat successfully catarrhal disease in the larynx and trachea by local application, and by our striking success in curing such diseases by removing diseased conditions in the nose, to the exclusion of any local measures whatever directed to the passages below." Further on he says: "Vaso-motor paresis of the blood-vessels of the nose constituting inflammation is liable to be followed by vaso-motor paresis in the larynx, trachea and bronchi."

The treatment of a chronic cough dependent on intra-nasal disease at once becomes apparent. By following the precepts of the quotation from remarks of the President of this Section, "that the laryngologist of the future must be more the rhinologist, and the rhinologist more the surgeon than the physician," a correct method of treatment of this symptom, as it occurs in connection with morbid states of the nasal passages, is usually afforded.

EFFECT OF NATURAL GAS UPON UPPER AIR PASSAGES.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY D. M. RANKIN, A.M., M.D.,
OF ALLEGHENY, PA.

In 1883, when natural gas was first introduced into Pittsburgh as a fuel, loud and many were the complaints that the heat it produced had the effect of making the atmosphere too dry for breathing purposes (not taking into consideration this new and untamed fluid, as to its noxious and combustible qualities) that it irritated the nose and throat.

So great was the complaint at first that a great many persons had it removed from their dwelling houses, but ingenuity often conquers a great many difficulties, and it certainly did in this case. The dryness of the atmosphere produced by the heat of the gas was obviated by kettles filled with water, hung over the fireplaces in which the gas was burning, the water in the kettles would become sufficiently heated to generate steam enough to neutralize the dryness produced by combustion of the natural gas. This dryness of the atmosphere was not an imaginary thing, because even after burning the natural gas in an open grate for a few minutes, the cracking and opening of the glued joints of the furniture of that room could be distinctly heard and seen. Before the plan of moistening the air was introduced, a large amount of the finest and most expensive furniture, such as pianos, parlor, bedroom and dining room furniture was entirely ruined. This natural gas is a great godsend to the cities and towns that are fortunate enough to be within piping distance of the gas wells. For a long time it burned before it was utilized, but finally our great manufacturers saw it was intended for some good purpose, and began piping it to their mills.

It has superseded coal and is now principally used in all the manufactories, business houses and dwellings. Aside from the comfort natural gas gives at the fireside, aside from the labor it saves in our mills and glass houses, it serves to illuminate our streets, and gives us additional light which no other city in the world possesses. There is no more danger in using it than there is in the illuminating gas that has been used for a century. I have been reliably informed by persons old enough to remember when gas for illuminating purposes was first introduced into Pittsburgh, that it was a long time before people became used to handling it; a great many explosions and loss of life occurred, but at the present time, especially in large cities, would we be willing to dispense with it?

When natural gas was introduced into Pittsburgh there were quite a number of explosions, and some of them very serious, resulting in great loss of life, doubtless caused by the fact that consumers did not know how to manage it as well as they do now. It was like coal oil when first introduced, people had to be educated to its use, and had to pay, oftentimes, very dearly for their education. As it is now managed we very seldom hear of an explosion, except when it is due to carelessness. Having these complaints frequently brought to my attention, I began to interest myself in the matter, and discovered that the occurrence of natural gas is by no means a recent discovery, it is mentioned as occurring among the Ancients, for instance, "the Holy Fires of Baku," also low pressure gas springs have been found in Germany, one of which at the salt works at Gottesgabe, on the Rhine, was utilized for illuminating purposes. In the United States gas wells were known to the earliest settlers, and have been in economic use for heating and illuminating since 1821. In this year the town of Fredonia, N. Y., utilized natural gas for illuminating purposes, and the results were so satisfactory that a second well was drilled in 1858, which furnished the supply for 200 burners.

While drilling for oil in Western Pennsylvania in the year 1859, small quantities of gas were always associated with the oil, and *vice versa*, gas was occasionally struck which contained petroleum. Among the most powerful gas wells struck in the vicinity of Pittsburgh was one at Murraysville, in 1878, at a depth of 400 feet, which was so powerful as to throw out the drilling implements and displace the derrick.

Until 1883 large quantities of this valuable agent was wasted, at this time dates the practical application of natural gas to manufacturing and domestic purposes. It was during this year that the great Westinghouse pipage company was formed to convey the gas from Murraysville wells to Pittsburgh. At present there are 1,200 miles of main pipe communicating with the gas wells, supplying consumers in mills, factories, houses, etc., of Pittsburgh and vicinity, to the extent of 600,000,000 cubic feet daily.

Different chemists, who have analyzed the natural gas, state that it is very variable. It will vary not only in different wells, but it will do so continuously in one and the same well. The following is the mean analysis taken from six different wells, by an eminent Pittsburgh chemist:

Marsh gas CH_4	67	per cent.
Hydrogen H	22	" "
Nitrogen N	3	" "
Ethylic hydride C_2H_6	5	" "
Olefiant gas C_2H_4	1	" "
Carbonib oxide CO_2	06	" "
Carbonus oxide CO	06	" "

By a glance at the above analysis one cannot doubt for a moment how impure and noxious the natural gas would be for breathing purposes. Upon examination of the cases suffering from the effects of breathing natural gas, and the changed condition of the atmosphere produced by its combustion brought to my notice, I discovered the following history: The patients usually complained first of a dryness of the nose and throat, followed by a free discharge of muco-purulent matter from those cavities, after which the dryness would recur, sometimes the irritation would extend to the larynx, and produce considerable huskiness of the voice. Upon examination of the nares, pharynx, and larynx with reflected light, a considerable amount of congestion would be observed, with extreme sensibility, which were promptly relieved by applications of four per cent. solution of cocaine, followed by application to the nares and pharynx of vaseline.

I should here state that three months after the first introduction of natural gas for domestic purposes there were no complaints; this can be readily accounted for. At first the plumbers and gas-fitters did not understand how to handle it. In the first place the pipes were made of metal too porous, the joints were not as tight as they should have been, the gas companies appointed inspectors to go to every place where gas was used, and test every pipe conveying natural gas, the result was they discovered that a large percentage of the pipes leaked, contaminating the atmosphere to such an extent as to cause the unpleasant symptoms to the upper air passages. Now we hear no complaints, and those persons who had the gas removed from their dwellings have, since the pipage has been perfected, had it replaced in their residences.

The following conclusions may be arrived at, with our present improved gas-fitting, and the experience our gas-fitters have acquired since its introduction. We may now feel perfectly safe from being asphyxiated by escaping gas, or any deleterious effects resulting from inhaling an atmosphere devoid of sufficient moisture to be conducive to a healthy respiration.

I am aware that a rumor has gone abroad (especially emanating from cities that have not the comforts we enjoy from this wonderful substance supplied us from the bowels of the earth in exhaustless quantities) that the natural gas is not healthy to breathe; it certainly is not, but in Pittsburgh we do not pretend to breathe it. We burn it, and enjoy it to its fullest extent, and expect to do so as long as it lasts.

ALEXANDER'S OPERATION, WITH A NEW METHOD FOR SECURING THE ROUND LIGAMENTS.

Read in the Section of Obstetrics and Diseases of Women, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY A. B. CARPENTER, M.D.,
OF CLEVELAND, O.

It is my purpose, in appearing before the members of this Section, to speak briefly regarding the Alexander operation, with special reference to its application to complete prolapsus.

You are all familiar with the claims of Dr. Alexander, and also with the writings of Mundé and others on the subject; therefore, it would be only waste of time to enter into detail in describing the various steps of the operation; but I will confine myself principally to a few remarks regarding the fastening of the round ligaments.

As a radical cure for this most distressing condition I believe the Alexander operation has no equal because of the simplicity of the work and the comparative, yes, almost absolute freedom from mortality. It is true there have been deaths recorded as resulting directly from the operation; yet this occurred in the early time before the detail was well understood.

The greatest objections raised in the past against this method has been the difficulty in finding the round ligaments. This, however, applied chiefly to the operations for retroversion and retroflexion, where the ligaments were small and very fragile, breaking while being drawn out, and causing the operation to be abandoned as incomplete, and the surgeon to bear the blame of his work being a failure.

In cases of complete prolapsus it is entirely different. The ligaments have become thickened and greatly enlarged; the difficulty in finding them in most cases is entirely removed. The many years of constant dragging upon the ligaments usually resulted in a hypertrophied condition, so that, instead of being small and fragile, we find them of much greater proportions, so that, by first replacing the uterus and then having it held well up by a sound in its cavity, the ligaments can be carefully drawn out with little or no danger of their breaking.

In 1885 I had the pleasure of listening to a paper by Dr. Alexander himself, read before the British Gynecological Society, wherein he described his method of shortening the round ligaments, and I was particularly impressed with what seemed to me to be the insecurity of the fastenings.

If we turn to our anatomy for a moment and consider the structures involved, the dense unyielding fibers of the pillars of the external abdominal ring, at the same time the round, smooth character of the ligaments, composed, as they are, of dense fibrous tissue, thus affording a limited opportunity for the formation of strong adhesions in the wound, it seems to me that a reasonable explanation can be found why many of the patients who have been operated upon have reported themselves in after months as not improved, the anchorage being so slight and frail that the uterus, by continually dragging, tears the ligaments loose and gradually settles down to its old position. This, at least, was the explanation made to myself, and I accordingly determined to try a different method of fixation.

The plan which I now employ is as follows: The uterus being replaced and held high up by an assistant, the incisions are made and the ligaments on either side drawn out until the uterus is found to be well up and forward; a needle armed with silver wire, No. 26, is then passed through the external pillar of the ring, through the round ligament, then through the internal ring; this is then twisted down firmly, cut off and the ends bent over and crushed down, that they may cause no irritation. The slack of the ligaments is then cut off, leaving just sufficient to fill the bottom of the wound. The ligaments are then split to within a short distance of the silver wire and turned partly outward from each other and stitched with fine gut to the lateral walls of the wound, the latter being then closed, a small drainage tube inserted, and the whole covered by an antiseptic dressing. The silver wire is left to become permanently encysted, and thus hold the ligaments firmly in place.

A high posterior plastic operation should then be made on the vagina, and upon the removal of the sutures from the latter operation a Hodge, or perhaps what is better, an Albert Smith pessary with a high bar should be introduced and worn for not less than six months. A case of complete procedentia of years' standing operated on by this method ten months ago is to-day perfectly well, and with the patient in a standing position the cervix can only be reached by the full length of the index finger.

In conclusion, therefore, I will say that this method of fastening the round ligaments is, in my opinion, superior to any with which I am acquainted, as it affords a firm anchorage and thus prevents the uterus from dragging upon the ligaments, thus drawing them gradually out, defeating entirely the object of the operation.

I am not unmindful that the operation is strongly condemned by men of much greater experience than myself; yet I very much desire to call attention to what appears to me to be a simple, safe and radical cure for one of the most distressing ills which woman is heir to.

166 Euclid avenue.

MEDICAL PROGRESS.

RESECTION OF THE INTESTINE.—CZERNY, of Heidelberg, reports (*Centralblatt für Chirurgie*) a series of twenty-one cases in which he has performed resection of the intestine. Of these eight died. Inasmuch as double resection was performed four times (with two deaths and two recoveries) and in one instance five tubercular fistulæ were closed the results of operation are seen to be improving greatly for these cases must be regarded as unusual. Although the results set forth are better than the general average for these operations the reporter does not doubt that intestinal resection in the hands of a skilful operator will exhibit a similar progress to that made by Spencer Wells in the case of ovariotomy. With improvement in the results obtained the indications for the operation will multiply, and these are more likely to present themselves than are the indications for the removal of the ovary. Although accident plays a great part in statistics based upon few cases still it appears significant to the reporter that whereas up to 1885 he had seven cases with four deaths, since that time he has performed the operation fourteen times with only the same number of fatal cases. Death results generally from collapse, less often from septic peritonitis, which can never be entirely prevented. In only one case was the suturing a failure; in this case there was necrosis of the sutured edges.

In eight cases the operation was performed at the ileo-cæcal regions with four deaths; in two cases at the transverse-colon; in one case at the flexum near the rectum; in five cases the small intestine was the seat of operation, one case being fatal; in four cases there was a double resection with two deaths; in one fatal case there was six lines of sutures.

Union always takes place by first intention. In one case only, where there was a tubercular fistula, did the fistula return. In all the cases a double row of silk sutures was employed, the intestine being dropped in the abdomen. Drainage of the abdominal cavity was nearly always avoided. The double row of sutures when properly applied secures such perfect union of the intestine that the aim to-day is to perfect one's individual technique rather than to seek new methods of operating.

THE INFLUENCE OF CERTAIN MEDICAMENTS UPON ARTIFICIAL DIGESTION.—ARTHUR KATZ has made experiments with a view to determining the influence of certain medicaments upon artificial digestion. For digestive material he employed Schültz's solution of the white of egg and dried white of egg. His digestive fluid consisted of a mixture of 1 liter of water and 2 grams of pepsin, with the addition of from 2 to 2½ per mil. of muriatic acid. The material to be tested was added to the fluid and the whole placed in an incubator to digest. With the necessary control experiments it was shown that muriate of morphine and sulphonal delayed the formation of peptones, the latter, however, only in large quantities, such as 3 grm. in 200 ccm. of the fluid. Atropine, strychnine, tr. nucis vomicæ, chloral hydrate, arseniate of potassium, sulphonal in small quantities, tr. strophanti and creosote were without influence upon the artificial digestion. The formation of peptone was increased by the sulphate of bismuth and the muriate of quinia.

TREATMENT OF PULMONARY TUBERCULOSIS WITH CREOSOTE.—SOMMERBRODT (*Centbl. f. Kl. Med.*) reiterates his claims for the creosote treatment of phthisis introduced by him. He maintains the assertion made in his first publications that the initial stage of the disease can be cured by creosote, while in the later stages the patient can be greatly relieved by the treatment, as has been proved by his own experience and that of many others. A positive explanation of the favorable action of creosote has of course not been given. Guthmann's experiments showed that rather more than 1-4000 part of creosote suffices to prevent the development of tubercle bacilli in blood serum, but to produce the same result in the body would require the presence in the circulation of 1 grm. of creosote, a much larger quantity than could be administered by the stomach. Sommerbrodt suggests the possibility of a cumulative action of the creosote when given in as large doses as possible, such as 1 grm. *per diem* for months at a time. Cornet's experiments on guinea pigs likewise furnish no explanation of the favorable action of creosote; they show its lack of influence in the infection of these animals wish tubercle bacilli, so that according to him the favorable influence of creosote upon phthisis is to be ascribed to its action in improving the appetite and in diminishing the secretion of the bronchial mucous membrane. Sommerbrodt however has observed such an extremely favorable action upon the bacilli and the morbid processes in the lungs in the human subject that he is not satisfied with Cornet's negative experiments upon guinea pigs. He prescribes the remedy in capsules of 0.05 grm. with balsam of tolu, giving in all as much as 1 grm. per diem.

MICROBES IN FISSURES OF THE ANUS.—M. JORISSENNE (*Le Bulletin Médical*) maintains that the persistence of fissures of the anus is due to the presence of microbes, and that the antiseptic is the only rational treatment; it also possesses the advantage of being essentially analgesic in its action. Sublimate is the most promptly curative agent; its application in the form of an ointment is painless, convenient and efficacious. The application should extend into the rectum as far as 3 cm.

RESECTION OF THE RECTUM.—In a report on the subject of prolapse of the rectum DR. JOSEF BOZDANIK says this trouble is of frequent occurrence particularly in children; in the majority of cases a cure is effected by the suitable treatment of the intestinal catarrh, but in several cases local astringents or caustics must be employed together with properly applied bandages. Many cases however resist medical treatment and after the unsuccessful employment of parenchymatous injections resort must be had to surgical operations. Sabadier excised the prolapsed mucous membrane and stitched the edges of the wound together. Dupuytren carried out Hey's idea which consisted in narrowing the oval opening. Dieffenbach reduced the prolapse and then cut out wedge-shaped pieces from the lower part of the rectum and from the anus and then united the edges of the wound by means of deep sutures; Lange's method was not less radical, and therefore surgeons began to return to the older methods of cauterization and parenchymatous injections. The reporter describes a form of operation practiced by him which differs from that of Mikulicz, Billroth and Nicoladoni only in the mode of introducing the sutures. The result of the operation in that entire portion of the rectum protruding beyond the oval opening is removed and an annular stricture is formed above the sphincter which however does not interfere with defecation. The mortality in the operations of which the reporter is advised was *nil.*—*Weiner Med. Woch.*

VARIATIONS IN THE CAUSTIC ACTION OF CARBOLIC ACID.—M. CHARLES has shown that carbolic acid *in solution* with glycerine or alcohol is not caustic, whatever be the degree of concentration. Even saturated solutions are readily borne by the skin and mucous surfaces, while the concentrated aqueous solutions are markedly caustic and produce a lively sensation of heat even upon the healthy skin. A small addition of water, however, to an alcoholic or glycerine solution suffices to render it caustic. The fact is readily explained if we admit that an instable combination which is decomposable by water exists between carbolic acid, a body related to the alcohols, and alcohol or glycerine, which latter is also an alcohol. In fact a saturated aqueous solution of carbolic acid produces more heat when mixed with glycerine than when added to a corresponding quantity of water.—*Le Bul. Méd.*

ARTIFICIAL PRODUCTION OF ASTHMA.—ARONSOHN (*Cent. Bl. für Klin. Med.*) reports the case of a clergyman, 33 years of age, who suffered from hoarseness, but had never been troubled with asthma, in whom a fibrous polyp of the right middle turbinated bone was discovered. In consequence of the first attempts at removing the polyp attacks of oppression of the breast and dyspnœa appeared upon the same day and the following night, but disappeared after the completion of the operation. The case, then, was one of asthma artificially produced in one who had never before suffered from this disease.

TREATMENT OF PRURITUS CUTANEOUS UNIVERSALIS.—In the treatment of general cutaneous pruritus a great number of remedies, mostly nervines, have been recommended, with the idea that iodopathic pruritus is purely a neurosis of sensibility. Topical treatment in these cases may properly be set down as useless; likewise the internal administration is not always productive of good results. DR. WERTHEIMBER recommends the use of salicylate of sodium, with which he has achieved surprising results in three cases. He prescribes it in the form of a 3 per cent. solution, the dose being two tablespoonfuls per diem. —*Corres.-Bl. für Schw. Aerzte.*

A SYNTHETICAL CARBOLIC ACID.—The anilin and soda factory in Ludwigshafen has introduced a so-called chemically pure carbolic acid made by synthesis. This product has a melting point of from 41–41° C. It is distinguished from the ordinary carbolic acid derived from tar by the absence of the pungent odor which characterizes the latter, and which is due to impurities present in the tar. Aside from this advantage it has been found by Garré that it is much less irritating to the skin than the ordinary article, and much less apt to produce chaps and eczema. A very convenient form of the new acid has already appeared in the shape of compressed tablets of the pure acid containing 1 and 2.5 grams each.—*Corres.-Bl. für Schw. Aerzte.*

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LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, MARCH 1, 1890.

MOOT POINTS IN THE DOCTRINE OF PLACENTA PRÆVIA.

We are unable to agree with our esteemed contemporary, *The New York Medical Journal*, in the opinion expressed in the editorial columns of a late issue,[1] that the signs of the times point to a lack of interest in the theory and practice of midwifery, indicative of the "decay of obstetrics." While prepared to admit that current medical writings are constituted in a disproportionate degree by contributions from practitioners blessed with the "abdominal instinct" and endowed with an affection for "pus tubes," still we think that obstetrics receives adequate representation in that which shall abide as the real literature of the day.

From among the numerous topics that have successfully engaged attention during the past year, and that might all be cited as illustrative of the truth of the proposition just formulated, we select placenta prævia, as well on account of recent material advances in doctrinal knowledge, as by reason of the import of the condition itself in practice. Let us note briefly some of the more significant contributions to the moot points in the doctrine of this complication.

KALTENBACH[2] agrees with HOFMEIER as to the pathogenesis of placenta prævia, and ascribes it to the persistence or to the new growth of the villi of the chorion læve and the development of the ovular decidua, which may or may not be conditioned upon antecedent corporeal endometritis. Although this hypothesis is not positively demonstrated, since sufficient preparations from early pregnancy as yet have not been examined, still it is rational and highly suggestive.

EDWARD WARREN SAWYER[3] defends the thesis, "partial rotation of the ovum in early pregnancy a cause of placenta prævia," upon the ground of the frequent occurrence of marginal insertion of the cord. But marginal and velamental insertion can be more plausibly accounted for on Schultze's hypothesis, while the recurrence of placenta prævia in the same individual—a well established fact[4]—negatives any general application of Sawyer's notion.

In diagnosis it is of interest to note the value assigned to abdominal palpation, as shown by HERBERT SPENCER'S communication to the Obstetrical Society of London.[5]

Chief interest, however, centres naturally in the treatment, and this phase of the subject was ably presented before the Obstetric Section of the British Medical Association of Leeds last August. The paper by BRAXTON HICKS is especially noteworthy, and we venture to copy his rules as fairly representative of the highest responsible opinion and of the best practice the world over.

Braxton Hicks[6] writes:

"1. After diagnosis of placenta prævia is made, proceed as early as possible to terminate pregnancy.

"2. When once we have commenced to act, we are to remain by our patient.

"3. If os be fully expanded and placenta marginal, we rupture the membranes and wait to see if the head is soon pushed by the pains into the os.

"4. If there be any slowness or hesitation in this respect, then employ forceps or version.

"5. If the os be small and placenta more or less over it, the placenta is to be carefully detached from around the os; if no further bleeding occur, we may elect to wait an hour or two; but should the os not expand, and if dilating bags are at hand, the os may be dilated. If it appears the forceps can be admitted easily, they may be used; but if not, version by combined external and internal method should be employed and the os plugged by the leg or breech of fœtus. After this is done the case may be left to nature, with gentle assistance, as in footling and breech cases.

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[1] The New York Medical Journal, February 1. 1890.

[2] 62 Deutscher Naturforscher Versammlung, Berlin klin. Wochenschrift, Oct. 28, 1889.

[3] Transactions of the American Gynecological Society, Vol. xiv. 1889, pp. 317-323.

[4] Lancet, April 6, 1889, Fitzpatrick.

[5] Lancet, June 15, 1889, p. 1189.

[6] The Medical Press and Circular, Aug. 28, 1889.

"6. If the os be small, and if we have neither forceps nor dilating bags, then combined version should be resorted to, leaving the rest to nature, gently assisted.

"7. If, during any of the above manoeuvres, sharp bleeding should come, it is best to turn by combined method, in order to plug by breech.

"8. Where the fœtus occurs before the end of the seventh month, version by combined method, no force following, is the best plan.

"To these I may add, if, however, we employ a routine method in all cases, it will be found that the version by combined method, no force following, gives a result as good as, if not better than, any."

BOOK REVIEWING.

One of the famous *literati* of the day makes it a cardinal rule never to read a book before reviewing it, because, says he, "it might prejudice me if I did, and I am always desirous of having my mind unbiased." It might be supposed that the principal idea in reviewing is to point out the good and the bad in the work, to assist in the judgment of the book, and to indicate in a general way its value. Not so! One cannot judge these matters *a priori*. Roughly speaking, we may say that there are at least three standpoints from which the reviewer sees his subject, namely: the commendatory, the condemnatory and the self-laudatory. The character of the review depends largely upon which of these eminences the operator has been located.

It is customary for reviewers of the first class to state, after the usual preliminaries, that it is hardly necessary to more than mention the well-known author's name, but, fearing that there may be among the wide audience addressed, some who are not so fortunate as to know the distinguished author, it would be well to state that the book is gotten up in the usual style of Messrs. Blank, and that the paper and type are good and clear. Altogether, the work is a commendable one and of especial value to the general medical student and busy practitioner. What miserable bathos!

Not so the reviewers of the second class. We rise from a perusal of their work with a feeling that we have been present at an intellectual Donnybrook Fair. Our ears still ring with the blows of the shillalah, for the only rule of action seems to be to strike at everything in sight. What is left of the book after the melée usually goes by unchallenged.

Our self-laudatory friends have an entirely different *modus*. The main desire among them seems to be, to direct attention to the great loss the author sustains in not having invited them to assist him in editing his work. The many points neglected or not known are freely pointed out and elucidated. The whole matter calls to mind very vividly Dr. Beale's article on intestinal mucous membranes. He says that successful critics are often constipated, and that many a severe article would never have seen the light, if the glands of the critic's large bowel had been in good order at the time of writing. A little humiliating, is it not, and a sad exemplification of human frailty—that the foundations for adverse criticism should rest upon the baseless fabric of such structures.

THE EARLY PREPARATION OF PAPERS.

The Secretaries of the various Sections are actively engaged in securing a supply of papers to be presented at the next annual meeting which convenes at Nashville on May 20.

May we suggest that the writers of such papers, if they have not already done so, enter immediately and in earnest upon their work? Let the several articles represent their purpose fully and receive at the hands of the writers a most careful revision, and when revised it is desirable, as far as practicable, that type-written copies be presented for publication. Those who are to command the time and attention of their associates should have the matter to be presented well matured and concisely expressed. The future success of the Association is largely dependent upon the value of papers thus presented, and its status both at home and abroad is to be determined largely by the work thus submitted.

Let there be a full supply of papers; let them bear the evidence of careful preparation, let them receive ample and able discussion when presented, and let both papers and discussions find their way in good shape to THE JOURNAL. Thus will its pages be furnished to repletion with valuable matter, and the Association be justly represented as to the ability of its writers.

PAPERS FOR THE ANNUAL MEETING.

From the known efficiency of the officers of the several Sections, it is safe to presume that a full supply of papers will be secured for the next annual meeting.

If every Section shall be as well represented as it was at Newport there certainly will be no lack. We commend to our present committees the work done by their immediate predecessors and simply ask them to do likewise.

The several secretaries are already in correspondence and as soon as their programmes are ready for publication they will appear in the Journal.

Writers will please bear in mind that the earlier their names appear on the programmes of their several Sections the earlier they will be placed in the order of publication.

In order that those who so desire may communicate with the officers we herewith present the names and addresses of the secretaries of the several Sections.

As the programme should be completed and ready for publication on April 1 no time should be lost on the part of those who purpose to prepare papers to be presented at Nashville.

The name of the secretaries of Sections are as follows:

Practice of Medicine.—Dr. H. McColl, Lapeer, Mich.

Surgery and Anatomy.—Dr. Jno. Blair Deaver, 120 South 18th street, Philadelphia, Pa.

Obstetrics and Diseases of Women.—Dr. Joseph Hoffman, 126 W. Diamond street, Philadelphia, Pa.

State Medicine.—Dr. F. S. Bascom, Salt Lake City, Utah.

Opthalmology.—Dr. E. J. Gardiner, 70 Monroe street, Chicago, Ill.

Laryngology and Otology.—Dr. Frank H. Potter, Buffalo, N. Y.

Diseases of Children.—Dr. E. F. Brush, Mount Vernon, N. Y.

Medical Jurisprudence.—Dr. T. D. Crothers, Hartford, Conn.

Dermatology and Syphilography.—Dr. Wm. T. Corlett, Cleveland, Ohio.

Oral and Dental Surgery.—Dr. E. S. Talbot, 125 State street, Chicago, Ill.

EDITORIAL NOTES.

HOME.

The Metropolitan Medical Society.—A new medical society has been started in New York city, which will not limit its membership to the city itself but will draw from the entire metropolitan district. Meetings will be held twice a month.

Medical Students Named in a Will.—Mayor Grant, of New York city, has received information that the will of Count Henry Hardegg, who died at Vienna, Austria, in May last, names that former city as a possible legatee. The bequest, if it ever comes, is to be set apart for the benefit of struggling medical students. The amount of the legacy has not yet been discovered.

The Arkansas State Asylum Damaged by Fire.—The Insane Asylum at Little Rock, Arkansas, was very nearly destroyed by fire on the 16th instant. One wing was burned down, involving a loss of $35,000. There was no loss of life although the inmates, numbering nearly five hundred, had all to be removed from the buildings. Many of the patients resisted removal and by their outcry and screams increased the terrors of the accident. The boiler-room and laundry are thought to have been the parts in which the fire originated.

Dr. Frank Ferguson, pathologist to the New York Hospital, has been elected Professor of Pathology in the New York Post Graduate Medical School and Hospital.

Typhus Fever in New York.—During the past two months typhus fever has escaped through the quarantine of the New York Harbor, and thence found its way to various parts of the country. The line of steamers from Antwerp has brought in the greater number of these cases, and especially the steamer Westernland. In the New York city hospitals as many as seven cases have been among the immigrants brought over by that steamer. There is said to be at Antwerp one or more emigrants' lodging-houses that are known to be infected with fever,—"fever-nests" that menace the health of two continents. Official correspondence has been had regarding these dangerous spots, calling for their sanitary reformation.

C. S. Ayres, A.M., M.D., the well known

oculist of Cincinnati, has been elected President of the Cincinnati Polyclinic Graduate School of Medicine. This institution could have no better assurance of success than calling such an able and widely known man to the presidency.

DEATH OF MEDICAL DIRECTOR ADRIAN HUDSON, U. S. NAVY.—The medical corps of our Navy suffers a severe loss in the sudden death of this valuable officer, who died at his post, in the service of his country, at the early age of 52 years. We present in the present number of THE JOURNAL a brief record of his life and services, which comes to hand from the pen of Surgeon Albert L. Gihon.

FOREIGN.

PHTHISIS IN HIGH ALTITUDES IN SWITZERLAND.—*The Lancet* quotes a report by Dr. L. Schrötter on the distribution of tuberculosis throughout Switzerland, from which it appears that even the inhabitants of high altitudes are not free from that disease, as many are wont to suppose. The mortality statistics of recent years indicate that no district is exempt from it. The proportional mortality by phthisis is not so great in the high as in the low-lying sections, but the statistics do not show that it would be a correct statement to formulate the ratio as inversely proportionate to the altitude. The element of occupation here steps in; for wherever a large industrial population exists the tuberculous mortality ascends; agricultural populations always suffer less, from this cause, than the industrial, where the altitude is the same for both.

CHOLERA IN RUSSIA.—The general public in Russia having become alarmed at the possibility of cholera following upon the heels of the influenza, by reason of some causal relation between the two diseases, the Medical Council of St. Petersburg has published the following bulletin: In view of the fact that according to the latest scientific discoveries all epidemic disease is produced by germs of contagion, each of which possesses a specific character; and in view of the fact that no species of microörganisms producing a definite disease is capable of such transformation as to enable it to produce another disease, each species of the microörganisms preserving for ages its original characteristics; and considering also the fact that no contagious disease can prevail in a locality if its proper germs of contagion have not been previously introduced, the Council declares that the epidemic of grippe can not engender an epidemic of cholera. Although, in fact, the sanitary conditions have exercised no influence upon the propagation of the grippe, the Council finds, nevertheless, that it would be very opportune and useful to provide for the proper sanitation of the city.

THE death of Dr. Gerhard, the senior member of the Faculty of Medicine of Paris, at the age of 81, has just been announced. He is stated to have been in active practice to the end, and had been so for fifty-two years at Strasburg.

BENARES, the sacred city of the Hindoos, and next to Damascus the most ancient city in the world, is to have a water supply, while Delhi, the ancient seat of the Mohammedan Empire, is to be equally fortunate in obtaining a large public water supply.

SURGEON LE QUESNE, of the British Army, has received the Victoria Cross for bravery in dressing the wounds of an officer while exposed to the fire of the enemy during an engagement in Burmah last May.

LEPROSY IN CHINA.—Leprosy is viewed by the Chinese as infectious, contagious and heriditary, but it is prone, they think, to exhaust itself in four generations. As many as eight varieties of leprosy are recognized. In the interior of China there are leper-villages to which all suffering from this disease must be sent.

MEDICAL CONGRESS IN CUBA.—The *British Medical Journal*, January 11, has the following notice of a congress set down for January 15, at Havana: "Many of the principal members of the profession are expected to take part in the proceedings. Among the subjects for discussion are hæmatochyluria, the use of mercury in the torrid zone, physio-pathological studies of Cuban women, origin of Cuban yellow fever and others suggested by the *genus loci*. In the surgical department there is a great preponderance of ophthalmological subjects and a total absence of cancer."

PROFESSOR VON ZIEMSSEN, of Munich, reached his 60th birthday December 13. It was the occasion of a celebration by the faculty and students of the University.

TOPICS OF THE WEEK.

A JOURNALISTIC REVIEW OF THE BRITISH REGISTRAR GENERAL'S ANNUAL REPORT FOR 1888.

For such persons as, with King Richard II., love to "sit upon the ground and talk of worms and graves and epitaphs" and kindred subjects, there is much congenial reading to be found in that portion of the Registrar-General's annual report which deals with deaths. The recently issued report is for the year 1888, which in these nineties sounds very much like ancient history; but the methods of the Registrar's office are notoriously leisurely, and, after all, there are certain advantages in a late appearance. For instance, it affords an opportunity of drawing comparisons between this country and others which make greater haste in getting out their statistics. From these we learn that only one European country has a lower death-rate than England—to-wit, Norway, where only sixteen persons out of a thousand die in a year. The other end of the pole is in Austria, where the rate is 29.2. With us it is 17.8 for a population of over thirty-seven millions. It has often been pointed out that these figures in no way represent an equal distribution of sex, women being in the majority by very nearly a million. In common justice it might at least be expected that, there being a greater number of women, more of them should die, but this is not the case. For males the death-rate is 18.8 per thousand; for females only 16.8. Women, in fact, have the advantage of a greater hold on life nearly all along the line. The first five years of existence are a most ticklish time for both sexes, but the girls get through them much better than the boys, who in that period die at the rate of fifty-two to a thousand living males. Out of a total of 510,971 deaths in 1888, as many as 198,064 were those of children under five, and boys were in excess by nearly seventeen thousand. The dangerous first *lustrum* once passed, a few years of comparative safety commence, till the age of ten is reached, when the chance of death occurring is reduced to its minimum. From fifteen it slowly rises again, and it is only at this period in life that males have the upper hand, there being a slight excess of female mortality.

The recognized causes of death are more than might be supposed, over 150 being enumerated on the register. The rate at which we live in the nineteenth century is borne witness to by the rate at which we die, no fewer than 49,985 of registered deaths in 1888 being attributed to diseases of the nervous system. Consumption and phthisis, apparently, are not disappearing so rapidly as some sanguine persons have supposed. Third on the list are the ailments classed together as diseases of the circulatory system. What at first sight seems startling is the greater mortality caused by illnesses which are not as a rule reckoned very alarming in comparison with others which have the name of being more serious. Thus 341 persons out of a million living die of measles and only 6 of typhus; 222 die of scarlet fever to 36 killed by small-pox; 428 of whooping-cough to 168 victims of diphtheria. The explanation is, of course, that the complaints which account for the larger number of deaths are proportionately more common. The odds against life running what may be supposed to be its natural course are something less than a thousand to one. Only 947 deaths of a million are put down to old age. The difference in degree of vitality which distinguishes the two sexes is further marked by the varied way in which they are affected by the same disease. More men dying, it is to be expected that any given disease would be more likely to be fatal to a man than to a woman; and this, as a general rule, is the case. Scarlet fever is far more common among females than males, but the former have a much better chance of getting over it, the majority of deaths due to this cause being among men. Cancer, St. Vitus's dance and whooping-cough constitute the whole list of complaints common to the two sexes which are more fatal to women. The greater liability of girls to whooping-cough is strongly marked —554 die of it to 451 males.

Perhaps the most morbidly fascinating of the Registrar's statistics are those dealing with what are classified as deaths from violence. In the year under notice such deaths numbered only 17,534, the lowest percentage yet reached. Violence includes homicide, suicide and fatalities arising out of accident or negligence. In murder, if in nothing else, there is absolute equality between the sexes. Nine per million of each die by the hand of another. The proportion seems a large one, but as many as 60 per cent. of homicidal deaths are infanticides. The first twelve months of life escaped, the odds against murder decrease till the age of 15 is reached, when there is next to no chance of it. For a few years this happy state continues, and then the chances increase again till, if the case happens to be a man, the older he grows the more likely he is to be made away with. The suicides of the year numbered 2,308, which is the largest amount ever recorded for this country. In this department, again, males greatly outnumber females, who are either less given to despair or are more tenacious of life. Gunshot, the knife, poison, drowning and hanging are the favorite means employed for disposing of life by suicide, and of these hanging is far the most common. It is sad to reflect that out of every million men now living in England twenty-seven will hang themselves, sixteen will meet death in the water, thirteen will cut their throats and seven shoot themselves. Women will make away with themselves in lesser numbers, but by the same means, with the exception of shooting, which is a method of *felo-de-se* that has scarcely ever been used by a woman. Experience has shown over and over again that there is very little probability of being proved wrong by the event in speaking prophetically of suicide and the manner of it. Year after year there is scarcely any variation in the melancholy record, and when once it is known that a certain number of persons have sought death by certain means in the past, it may be taken for granted that the figures will repeat themselves with remorseless accuracy.

Of the violent deaths there remains a balance of 14,908 which are accounted for by accidents. Large as the number seems, it is a trifle to what might be expected from the rates charged by assurance companies. The usual odds laid by an accident company are £1,000 to £4 that you do not die from an accident in a year. Supposing that the whole population of the country were insured against accidents in one office, each person paying £4 and being guaranteed £1,000 in case of death by mishap, the premiums would reach the figure of £143,746,868, and the sum to be paid for deaths would amount to £14,908,000, leaving, after a deduction of a few millions for working expenses, the very respectable profit of £130,000,000. The chances of meeting with accidental death are highest in Monmouthshire, where there are 902 to the million, and next in the northern mining counties. In London the number per million is 697; and lowest on the list comes Bedfordshire, where it is only 343. Bedfordshire, then, is the place where those who have a horror of sudden death should locate themselves, but the county which has a lower death-rate than all others is Surrey—excluding, of course, the metropolitan area. Lancashire still maintains its reputation as the county seat where more deaths occur in proportion to its population than any other in England.—*St. James Gazette.*

PROFESSOR TYNDALL ON THE GERM THEORY.

If lucid and full exposition is sufficient for instruction, the address lately delivered in the Ulster Hall, Belfast, by Professor Tyndall must have left his audience with a fairly clear idea of the part played by living organisms in disease and putrefaction. The facts connected with this notable discovery of modern times were marshaled by the speaker with great skill and in a descriptive manner which could hardly fail to interest the most casual hearer. The close connection between Lister's experiments and the conspicuous triumphs of recent surgery were briefly but clearly explained. The important part played by the genius of Koch in disclosing the germ origin of tubercle, splenic fever and cholera was discussed at some length. An illustrative confirmation of the experiments with tubercle was afforded by quoting the observations by Cornet, which go to prove that the infective media of phthisis consist of germs liberated in the dust of dried sputum, but harmless while imprisoned by it in a moist condition. The climax of interest was reached, however, in those passages of the address which described the life and work of the prime investigator of germ action—Pasteur himself. The recital of the steps by which this most laborious and careful observer proceeded from a general recognition of the principles governing the growth of living organisms to a clear understanding of their specific influence forms in itself a chapter as romantic as it is real in the history of modern science. Remarkable though it is, however, Professor Tyndall had no difficulty in showing that it is excelled alike in interest and in importance by the narrative of those practical deductions, the explanation and application of which have conferred on Pasteur's work its most characteristic feature and its chief glory. Growers of silk, who learned from him the germ origin of *Pebrine*, wine-producers and brewers, to whom he taught the causes of morbid fermentation and its easy remedy, were among the least of those he has aided. For a time he took no directly active share in unlooking the secrets of germ growth in the human body. Later, when animated, perhaps, by the example of his German counterpart, Koch, Pasteur bent his energies to this new sphere of his old work, his success, now historical, was even more striking. We need not do more than refer to the remarkable series of experiments which culminated in establishing triumphantly the preventive and curative power of modified inoculation over such intractable scourges as anthrax and rabies. Professor Tyndall did well to acquaint his hearers with some of the details of these researches. He was also particularly happy in closing with a statistical summary of the results obtained by inoculation in rabies, which proves that the mortality from this disease, thanks to the Pasteur method, fell in 1887 from the high average of 70 to that of 3 per cent. Such results, he maintained, asserts with a logical force which cannot be resisted the reason and the justice of performing, even though it imply vivisection, such experiments as are needful for their attainment.—*The Lancet.*

INFLUENZA AND DENGUE.

The *Berliner klin. Wochenschr.* has recently published a tabular comparison of influenza and dengue by Dr. Limarkis, of Constantinople, to the following effect. D. stands for dengue, I. for influenza. Localization: D. hot countries; I. all latitudes. Duration of epidemic: D. three to five months; I. one to two months. Extension: D. slow, and from small centres; I. rapid, and over large tracts at a time. Commencement of disease: D. always sudden; I. almost always sudden. Fever: D. always very high; I. not always very high. Nervous system: D. lassitude, pains in the head and limbs; I. the same. Larynx and trachea: D. seldom affected; I. always affected. Dyspnœa: D. never; I. frequent. Gastric symptoms. D. always present, violent and persistent; I. may be absent altogether. Exanthem: D. always, beginning in face and descending, erythematous, followed by desquamation; I. seldom, irregular. Headache: D. a feeling of pressure from without; I. sharp, internal, often neuralgic. Complications: D. rarely the heart, liver, or kidneys may be affected; I. frequent, chiefly bronchitis and pneumonia. Reconvalescence: D. very slow; I. usually quick. Prognosis: D. always favorable; I. occasionally bad. Lower animals affected: D. dogs and cats; I. horses. As regards Spain, Dr. Sentiñon writes that the epidemic which is rapidly gaining ground there is undoubtedly influenza, and it is distinctly different from cases of dengue, which have been well observed in that country. The question—influenza or dengue?—has been raised by medical men, in Paris especially, but authorities incline to the belief that the two diseases have nothing in common.

TIME SOLVES MYSTERIES.

At last it becomes apparent that when Columbus set his face westward, he had Chicago in his eye. It seems a little singular that it required four centuries to determine the nature of his malady.

PRACTICAL NOTES.

MENTHOL IN ACUTE RHINITIS, INFLUENZA, AND OTHER AFFECTIONS OF THE NOSE AND THROAT.

Mr. J. Lennox Browne, F.R.C.S., Ed., writes in the *Medical Press and Circular*, Jan. 8, 1890, regarding the use of menthol in the above affections, which our readers will find a subject of interest at the present time. He says that the vapor of menthol checks in a manner hardly less than marvellous, acute colds in the head, and is also to be recommended with a certainty of success, if used on its first onset, in arresting or as a preventive of infection of epidemic influenza, and this even for cases in which the nasal symptoms commonly associated with the word influenza, are not manifested.

Menthol exerts its action as follows:

1. It stimulates to contraction the capillary blood-vessels of the passages of the nose and throat, always dilated in the early stages of head cold and influenza.
2. It arrests sneezing and rhinal flow.
3. It relieves, and indeed dissipates, pain and fulness of the head by its analgesic properties, so well known by its action when applied externally to the brow in cases of *tic douloureaux*.
4. It is powerfully germicide and antiseptic. It thus kills the microbe of infection, and prevents its dissemination.

The remedy may be employed by means of a general impregnation of its vapor through a room or house, or locally to the nostrils and air passages; for both which purposes there are several methods:

a. A 10 to 20 per cent. solution of menthol in almond oil, in liquid vaseline, or in one of the many other odorless paraffin compounds, can be sprayed into the nose or throat, or about a room.

b. By placing 20 or 30 grains in an apparatus specially designed by Resenberg for administering the drug in cases of laryngeal consumption by inhalation, in the form of vapor mingled with steam.

c. By placing a similar amount or one or two drachms of the oily solution in a Lee's steam-draft inhaler, or bronchitis kettle.

d. By a simple arrangement of placing a saucer of water containing a similar quantity of the crystals over a gas burner in the hall, by means of which the whole house is kept constantly permeated with the drug.

e. But by far the most convenient method for personal use is to carry always the ingenious pocket menthol inhaler, known as Cushman's, which should be used not only on the first approach of an attack, but three or four times a day during an epidemic, and always in cold-catching weather by those subject to head colds.

The instrument consists of a glass cylinder four inches in length, half an inch in diameter, and open at both ends. The tube contains crystals of menthol closely packed and prevented from escape by perforated zinc and cork. The opening at one end is twice the size of the other, the larger being intended for inhalation by the mouth, the smaller for the nostril. The latter is the method which the author, by preference, recommends. It is not to be simply smelt, but well sniffed or inhaled, so as to cause some tingling or smarting, a sensation which is quickly followed by that of coolness, and openness of the previously "stuffed" and heated nostril.

The author concludes: "I have also employed menthol with advantage in the form of nasal spray or brush application in diphtheria. For all forms of nasal disease causing obstruction to the natural breath-way, I prescribe the menthol inhaler to the extent of hundreds per annum. By its use, when the nasal discharge is excessive, it is checked; when deficient and thickened, as in hypertrophic rhinitis, its healthy character is restored; and when arrested, inspissated and malodorous, as in atrophic rhinitis, fluidity is promoted and the foul smell corrected."—*Boston Med. and Surg. Journal.*

A VALUABLE PRESERVING FLUID.

Dr. Alexander Macalister, in his recent Text-Book of Human Anatomy, recommends the following mixture for the preservation of anatomical material:

Alcohol.	30 per cent.
Glycerine.	10 " "
Carbolic acid	2 " "
Water	58 " "

TREATMENT OF SCARLET FEVER AND QUINSY BY CHLORAL HYDRATE.

Dr. James C. Wilson highly recommends chloral hydrate in scarlet fever in frequently repeated small doses of one to five grains, according to the age of the patient, as easy of administration and being made palatable, and well tolerated by the stomach . having a marked sedative effect, which is highly satisfactory; controlling the inflammation in degree and extent both in the throat and kidneys, and preventing the complications and sequelæ, such as otitis media and glandular inflammation. In quinsy also, another writer says, a gargle of three or four grains to the ounce of glycerine is almost a specific.

AN EXCELLENT OINTMENT FOR ACNE

May be formed by taking two parts of resorcin and boracic acid, and adding to it twenty parts of vaseline. This should be rubbed in night and morning, after plenty of hot soap and water and a good rough towel has been used.

SOCIETY PROCEEDINGS.

New York Academy of Medicine.

SECTION ON ORTHOPÆDIC SURGERY.

Stated Meeting, January 17, 1890.

V. P. GIBNEY, M.D., IN THE CHAIR.

DR. W. R. TOWNSEND presented a case of

CONGENITAL TALIPES — RIGHT EQUINO-VARUS, AND LEFT CALCANEO-VALGUS.

The case was of considerable interest on account of its rarity. Mr. Tamplin states that out of 764 cases where the deformity was congenital, there were only fifteen in which there was varus of one foot and valgus of the other; and only nineteen cases of calcaneus. Dr. Townsend said that this case came to him at the Hospital for Ruptured and Crippled on December 23, when only 10 days old. It was the mother's second child, and the labor had been normal; there was no history of club foot in the family. He had already commenced treatment of the right foot, and consequently the deformity was not so marked as when he had first seen the case.

DR. A. M. PHELPS said that this was only the second case of the kind that he had seen; and in connection with it, he desired to present a plaster cast of two feet removed from the womb of the mother after her death at the sixth or seventh month of utero-gestation. It showed equino-varus of the left, and calcaneo-valgus of the right foot, and was an admirable example of the manner in which the deformity had been produced by the pressure of the uterus. There was no history connected with it beyond what had been stated. The original is in Prof. Volkmann's museum at Halle, Germany.

DR. JOHN RIDLON remarked that the chief interest in this class of cases is connected with the subject of their causation. He had seen only one other case, which was shortly after the publication of Dr. H. W. Berg's paper on this subject. This patient had the same deformity, and in addition, clubbed hands on both sides.

DR. V. P. GIBNEY did not think he had seen more than three or four such cases in an experience of eighteen years. He thought that the retarded rotation theory, as explained by Dr. Berg, accounted very well for these cases.

DR. A. B. JUDSON said in regard to the foot affected with calcaneus that, although at first sight it appeared to be a severe deformity, it was quite amenable to treatment, and cited a case published by Dr. Churchill, of Iowa, in support of this assertion, in which he advised simple manipulations, and made an appointment to do a tenotomy one month later. At the end of that time, he was surprised to find that the deformity had entirely disappeared. In another similar case reported by Dr. Prouty, of New Hampshire, the trouble was entirely remedied by the same simple manipulations, so that when the child began to walk, the foot was absolutely normal. A remarkable case had been reported by Dr. Gibney a few years ago to the New York Pathological Society, in which the calcaneus was so extreme that the digits had made indentations on the anterior part of the leg.

The paper of the evening, on

THE OPERATIVE TREATMENT OF TALIPES CALCANEUS, PARALYTIC,

was read by DR. V. P. GIBNEY, who exhibited eight patients illustrating the advantages of the operation described in his paper. This operation was that which Mr. Willett, of St. Bartholomew's Hospital, published in the St. Bartholomew's Hospital Reports, in 1880. The technique is as follows: A large Y-shaped incision over the posterior aspect of the leg, lower fourth, the stem of the Y ending at the os calcis—the stem itself about 1½ inch in length, while each side of the V-shaped portion is about 2½ inches long. The incision exposes the sheath of the tendon. The V-flap is then dissected, the sheath is opened, and the tendo Achillis raised from its bed by a curved director. A strong catgut ligature is passed through the upper portion of the tendon to serve as a means of preventing retraction after section, and the tendon is cut through obliquely, this section being made as oblique as possible. With the vulsellum forceps, each end of the tendon is grasped, and the upper portion pulled down towards the os calcis, while the foot is fully extended and the knee slightly flexed.

The tendon is sutured with catgut, back and forth, with about three or four heavy sutures, and the end of the V-flap brought down to the end of the stem, and the edges sutured, taking every alternate stitch through the tendon itself.

The aim is to convert the Y-shaped wound into a V-shaped cicatrix. It is better to use catgut altogether, in order that the wound may not be disturbed for three or four weeks. Dressings, and plaster of Paris, which extends from the toes up to the middle third of the thigh, the knee being flexed to an angle of about 120°, and the foot extended to the full limit, complete the procedure. The operation practiced by the reader of the paper differs a little from that of Mr. Willett, in the following particular: Mr. Willett used wire and exsected a portion of the tendon. The wire he used was merely for fastening the ends of the tendon together. The objections offered to his mode were that the wire cut through the tendon, and that one was in danger of removing too much tendon.

The paper was based upon an analysis of twenty-eight cases operated upon during the past six years. The results showed seventeen good, eight fair, and three poor. The term "good" was defined as a useful foot without any relapse after a sufficiently long time; ability also to walk without a brace or support of any kind. "Fair" was defined as a slight stretching of the cicatrix, but not enough to impair the usefulness of the foot. Shoes with the heel raised and a steel tongue are also required to make the gait satisfactory. "Poor" referred to those cases where the cicatrix had stretched and the deformity had relapsed.

The general results, however, were very satisfactory. The time elapsing between the operation and the date of last observation was as follows: From three to twelve months, 9; from one to two years, 15; from two to three years, 1; from three to four years, 1; five years, 1; six years, 1.

Sixteen healed by first intention, 12 by granulation. Of those healing by primary union, 10 were good, 3 fair, and 3 poor. Of those healing by granulation, 6 were good, 5 fair, and 1 poor. In those where granulation took place, the tendon sloughed in three instances, and a portion was removed through the wound. In no instance was a brace required, but particular attention was given to the building of the boot or shoe. The instructions were to have the heel raised at least 1 inch, to have a stiff counter, and a leather tongue reinforced by tempered steel. The hopelessness of paralytic calcaneus was discussed at length; the difficulty of correcting the deformity by means of apparatus; the great strain on the spring itself, the frequency of breakages, and the satisfactory results generally.

Dr. **Joseph D. Bryant** said that he had been especially interested in the statement regarding the changes which in many cases occur in the length of the new tissues which had been connected by the operation with the tendo Achillis. The subject was of much importance as bearing upon the question of the behavior of cicatricial tissue elsewhere in connection with the repair of deformities of another kind; and although it does not follow that because fibrous tissue in this particular situation retracts after the force has been taken from it, fibrous tissue will do the same thing elsewhere, the subject becomes of immense practical importance in connection with the recent methods for the radical cure of hernia. If we study the behavior of the cicatricial tissue of burns when put on the stretch, we shall find that it will stretch, but that when released, it will return to its former position, or even become more contracted. Such tissue might properly be compared to rubber which is tireless, while the tissue concerned in the operation under discussion might be looked upon as rubber which has become tired.

He would like to know if one of the cases which showed such extreme loss of power was likely to be benefited by a repetition of the operation.

Dr. **C. A. Powers** was particularly interested in the subject of tendon suture of the hand and wrist, in which he had had considerable experience. He had become convinced that careful antiseptic suture of these cases, with proper rest of the parts, yielded uniformly good results. Primary union seemed to be a requisite for a good functional result in hand and wrist cases, for when healing took place by granulation the tendons became caught in the cicatrix and there bound. He would like to know in what proportion of cases the author had secured primary union, and how the result seemed to be modified when healing took place by granulation.

Dr. **R. H. Sayre** had noticed that some of the patients exhibited were able to move the heel independently of the long flexor of the great toe, and he supposed that as the paralysis had been only partial, the shortening of the tendon had enabled the weakened muscles to act to better advantage. Such cases ought to be much benefited by the persistent use of massage and galvanism, and they present a much more favorable field for operation than those in which the paralysis is absolute, for under such circumstances shortening of the tendon only results in the formation of an unyielding fibrous cord.

The progress of the deformity, when untreated, must depend largely upon the amount of damage originally done to the spinal cord. He had seen patients with very marked cavus who, instead of walking on the bottom of the heel, walked upon the posterior portion, which had, in consequence, developed an elastic buffer. He had hesitated to interfere, as such cases do not hold out much hope of improvement, and the gait is much better than the appearance of the foot would lead one to suppose was possible.

As regards treatment, he favored the use of a brace similar to the one described by Dr. Gibney, or with an elastic spring to take the place of the gastrocnemius. Such an appliance will give the patient comfort and enable him to move about with less of a wooden tread.

The results shown in the cases this evening are exceedingly good, but he was surprised at the amount of stretching which the cicatricial tissue had apparently undergone. The usual plea against tenotomy is that the resulting scar tissue tends to contract and reproduce the deformity. This, he thought, was a mistake, for the tissue obtained after a subcutaneous tenotomy is not at all comparable to that obtained in an open wound by the process of granulation. There should be no more secondary contraction after a non-suppurative subcutaneous tenotomy than occurs in tissues after aseptic healing by blood-clot. Whatever elongation has occurred in the cases shown this evening in all probability took place not in the cicatrice, but in the muscular fibres above, the paralyzed muscle being constantly antagonized by a normal muscle and thus gradually stretched out.

DR. RIDLON said that one of the patients exhibited had been seen by him last summer, and he had then strongly favored tenotomy on account of the extreme equinus which then existed, but he saw that the foot was now in good position.

In the mechanical treatment of this condition he had been aback, but since Bernard Roth, of London, published the description of his brace for drop-toe with tempered spring at the back of the leg, he had considered that such an instrument, having a spring running from the garter line, with a steel plate to the ball of the foot, was much better than those ordinarily in use.

DR. H. W. BERG was inclined to take a gloomy view of these cases of polio-myelitis; yet he did not consider them entirely beyond help from neurological treatment. Were it conclusively proven that the nervous supply of the posterior group of leg muscles, for instance, is entirely derived from one level of the anterior gray horns in the spinal cord, or from one series of cells in the spinal cord, it is obvious that if these cells had been entirely destroyed, any electrical treatment must of necessity be useless, as regards restoring power to the limb. But it has not been proven that the nervous supply is derived in this way, and it is barely possible that a few cells, giving rise to fibres of any one nerve, have escaped the inflammation. The number of these nerve fibres remaining may be so small as to escape notice in an electrical examination, and yet be sufficient to exert an important influence upon the movements of the foot. Hence, if these healthy nerve fibres and muscle fibres to which they are distributed be stimulated by a galvanic current, they will take on a vicarious action under the irritation of the galvanic current, and will cause even in old cases of poliomyelitis, as he had frequently observed, a decided improvement in the power to extend the foot. In his experience fully 95 per cent. of the cases had been relieved, although none were cured. He did not think that even the most enthusiastic operators claimed that they did more than relieve their cases. A large number would certainly be benefited by the operation described by Dr. Gibney, but any operation including simply the soft tissues was hardly a philosophical one, and could not be expected to give as good results as one which would fix the bony tissues.

It is evident that in the cases exhibited the scar tissue has stretched as the children grew older and the weight of the body increased. This result could be postponed but not averted by furnishing a support for the foot.

DR. JUDSON said that the difficulty in walking experienced by these patients was due to their inability to use the anterior part of the foot, so that the toe cannot be pressed forcibly against the ground, and hence they walk very much like one having a peg leg or an amputation of the anterior part of the foot.

It has been stated that the aborigines of this country were in the habit of performing Lisfranc's amputation upon their captives, who were thus able to work in the fields, but were incapable of rapid locomotion towards liberty. A patient affected with talipes calcaneus is in practically the same condition.

The object of the operation described this evening seems to be to restore some of this function of the anterior part of the foot, so that the patient in walking can bring the weight first on the heel and then on the toe; but it is not easy to understand how the operation can accomplish this, for it is essential that there be very firm union between the calcaneus and the upper extremity of the tibia along the line of the gastrocnemius. With one exception the cases exhibited could not put their weight on the toe at the same time that the well foot was raised from the ground; nor is it reasonable to suppose that they will retain for any great length of time the slight connection between these parts. He was inclined to think that a cicatrix resulting from primary union was less liable to contract than one which occurs after a long process of granulation. It is difficult to overestimate the strain which falls on the tendo Achillis. The great mass of the muscles of the calf gives an indication of this force. The foot may be considered as a lever of the second class, the fulcrum being at the toe, the weight at the ankle and the power at the heel.. The long and short arms of the lever are represented respectively by the portions between the ankle and the toe and the ankle and the heel, and the strain produced by the weight of the body is thus multiplied, as it falls on the tendo Achillis.

He thought that much could be done for these patients by mechanical treatment, and the object of his brace was to transfer some of the weight of the body to the anterior part of the foot. In the brace formerly described by him there was a joint at the ankle to arrest motion at a right angle; but the brace has been rendered much more durable and equally efficient by the omission of the joint in the present instrument. The weight which naturally comes on the plantar surface of the anterior part of the foot in a well person, with this apparatus comes upon the anterior part of the upper portion of the tibia in the neighborhood of its tubercle, so that the patient first strikes the heel and then puts the weight upon the anterior part of the leg in its upper portion, thereby decidedly improving the gait. The sensation is very much like that of kneeling, for the weight, instead of coming on the ball of the foot, as in the healthy person, comes on that part of the tibia which takes the weight when in the kneeling posture. These cases can not, of course, be cured by the use of such apparatus, but adult patients are often very glad to wear a simple and durable apparatus which improves the gait.

Dr. Judson remarked that Dr. C. Fayette Taylor had once said that one reason for the muscular degeneration which occurs in these cases is that the weakened and half paralyzed muscles, being compelled to endure such an enormous strain, yield at once; but if they are relieved, by means of an apparatus, of some of this duty, they are less likely to undergo such degeneration, and, therefore, the chances are better for ultimate improvement.

DR. FREDERICK PETERSON agreed with the reader of the paper regarding the uselessness practically of the galvanic and faradic currents in these old cases; for, he did not believe that the current could restore destroyed muscle fibre or degenerated nerve fibres or cells.

DR. H. L. TAYLOR said that in considering tenotomy, one must remember that in most cases, not only the muscle but the tendon itself, is atrophied, so that it is at times a mere thread. These cases of calcaneus are exceedingly difficult to treat, and any real advance will be very welcome; but he considered that the mechanical treatment was fairly satisfactory as a palliative measure. We can retain the foot in a position of election for an indefinite period, and improve locomotion by enabling the patient to transfer the weight from the heel to the ball, not of course through the tendo Achillis, but by impinging on the upper end of the tibia by means of an apparatus.

He wished to lay emphasis on the statement that calcaneus could usually be prevented from developing, when these paralytic cases were seen sufficiently early. The foot could be held with absolute precision; and although he had followed for a considerable time, cases of paralysis of the posterior tibial muscles, he could not recall a single one in which calcaneus had developed under proper mechanical treatment.

DR. PHELPS said that in cases of flail foot with absolute paralysis, he was accustomed to do an excision, or a Pirogoff's amputation, which is a safe operation providing firm anchylosis can be secured. Unfortunately this is not always obtainable in children. When the tendon unites primarily, union takes place by blood-clot, and the result is not cicatricial tissue but a reproduction of the tendon; and therefore stretching cannot take place in the tendon itself, but in the body of the muscle. The same argument has been brought forward against the open operation for club foot, only it has been claimed that the cicatricial tissue contracted; but when healing by blood-clot follows that operation, the cicatricial mass does not contract, nor did he believe it yielded. From birth up to the third or fourth year, and even later, there is a development of the deformity, and therefore in estimating the beneficial results from any special method of treatment, one must wait a similar length of time before passing upon the result.

He had been much interested in Dr. Gibney's cases on account of the candor with which they had been presented, and the care exhibited in securing careful histories; but until the ultimate results could be ascertained, he preferred to cut the anterior tendons when required and apply a brace similar to the one which had been presented; or a brace with a posterior rubber muscle acting on a lever attached to the sole of the shoe; and in special cases, either Pirogoff's amputation or excision.

DR. GIBNEY in closing the discussion, replied seriatim to the questions that had been propounded. He could not say whether a second operation in one of the cases would be of any benefit.

He had not entirely completed his table of results, and could only say that about one-half of the cases had healed by primary union, and that his analysis, as far as it had gone, failed to show much difference in the results dependent upon the method of healing. He had of course always aimed to secure primary union; but some of his best results had been obtained in cases in which the granulating process had been tedious, and even where some of the tendon had protruded, and had sloughed away, or had required removal.

He was sorry that he was unable to furnish records of systematic electrical examinations in these cases; but in the hurry of hospital work, this portion of the work had frequently been omitted. He had, however, the report of an examination made by Dr. M. A. Starr before the operation on the little boy who had attracted attention by his ability to stand on his toe and on the ball of his foot. Dr. Starr reported at that time—two years ago—that the posterior group of muscles showed well marked reaction of degeneration, and failed to respond at all to the faradic current, and he gave it as his opinion that it was very doubtful if recovery would take place. Dr. Gibney thought that most of the gentlemen present would agree with him in saying that the patient now had considerable power in that posterior group of muscles.

In alluding to electrical treatment, he did not intend to disparage all such treatment, but simply to record his own disappointment with it in connection with confirmed cases of calcaneus. He believed with Dr. Berg, that if certain nerve fibres still remained intact, they could be developed by appropriate treatment. He was also willing to admit that an operation which secured anchylosis or synostosis was capable of giving a very useful foot; but from what he had heard of the operation, there seemed to be good cause for doubting the permanency of the results. Besides this the operation was a much more formidable one than that which he had described in his paper, and it would often be impossible to secure the consent of the parents to perform it, while they would willingly agree to the other operation.

In regard to mechanical points raised by Dr. Judson, it must be remembered that in addition to the gastrocemius muscle, the perineal group and some of the interossei are also involved.

In only one of his cases had he met with the ribbon-like form of the tendon, and the result of this case is reported as "poor." When this condition exists, the tendon must be brought further down, and particular care exercised in the process of suturing, aiming to have the tendon well embedded in the V-shaped flap.

DR. PHELPS presented a specimen that was apparently an intracapsular fracture of the femur. It had been removed from a man in the dissecting room, who was noticed to have the legs flexed and abducted, and twenty or more sinuses, healed and unhealed, about the thigh, which had burrowed in every direction. Through a most unfortunate mistake on the part of those who secured the specimen, the soft parts were all carefully removed. The pus is stated to have come from a cavity behind the mass of new bone which is seen in the acetabulum; and the new joint is found to be perfect. When the specimen was exhibited a few evenings since before the Surgical Section, it was thought to be a case of old hip joint disease; but the specimen clearly shows, since sections have been made, that this is not the case, and is of peculiar interest as illustrating the utter impossibility of curing such a case by mechanical treatment. It was a strictly surgical case, and unless the sinuses were followed up and treated by thorough curetting and free drainage with antiseptic precautions, the man must have died, as he did die, from amyloid disease of the liver and kidneys.

DR. J. D. BRYANT concurred in the opinion that this was a case of intracapsular fracture.

A SIMPLE METHOD OF PREVENTING THE BREAKING OF PLASTER AND WAX CASTS.

DR. PHELPS exhibited two casts so treated. He said that in order to render plaster or wax casts almost unbreakable, it was only necessary to rub well the surface of the cast with plumbago, and then by the process of electro-deposition, cover the whole surface with a film of copper about 1 mm. in thickness. To illustrate the efficacy of this method, the speaker took one of the specimens, a large cast illustrating Dupuytren's Contraction, and threw it violently upon the floor, without its sustaining the slightest damage.

The other specimen had already been shown at the meeting in connection with Dr. Townsend's case of club feet.

PROF. EDUARD VON WAHL, of Dorpat, one of the editors of the *St. Petersburger medicinische Wochenschrift*, died on Jan. 29, in consequence of an accident he met with a short time ago, by which several of his ribs were fractured.

NECROLOGY.

Medical Director Adrian Hudson, U. S. Navy.

The medical corps of the navy has recently suffered the loss of one of its ablest and most estimable members in the person of the late Medical Director Adrian Hudson, who died at the U. S. Naval Hospital at Mare Island, California, of which he was in charge, on Friday, the 7th instant, after a few days illness from pneumonia, following an attack of "Grippe."

Dr. Hudson was born in Montreal, Canada, of an American father and English mother on Christmas Day, 1837, and was consequently only a little over fifty-two years old at the time of his death. He was educated at the McGill University, at Montreal, and entered the naval service as an assistant surgeon on the 30th July, 1861, his first duty (1861–62) being with the Mississippi Flotilla, where marked mention was made of his skill and gallantry. He was next attached to the steam gun-boat "Eastport," of the Mississippi Squadron (1863) and to the apprentice ship "Sabine" (1864–65). He was made Passed Assistant Surgeon June 22, 1865, and promoted to Surgeon on the 17th August of the same year. He served aboard the U. S. S. "Tuscorora," in the South Pacific Squadron (1866–67), and was stationed at Mound City, Illinois (1868–70). He was the Surgeon-of-the-Fleet on the North Atlantic Station on board the flag-ship "Ancestor" (1874–75), and stationed at the Navy-Yard, Washington, D. C. (1875–78).

In 1879 he was appointed Assistant to the Chief of the Bureau of Medicine and Surgery at the Navy Department, and on the 10th June, 1880, he was commissioned Medical Inspector. He was senior member of the joint Army and Navy Board, on which Dr. Billings represented the Army, to locate and establish the Army and Navy Hospital, at Hot Springs, Arkansas.

His last duty at sea was on board the flag-ship "Trenton," of the Pacific Station, from which, having been promoted to Medical Director, July 10, 1888, he was detached and ordered to the charge of the Naval Hospital at Mare Island, California, thus escaping the disaster at Samoa. At the time of his death he was President of the Naval Medical Examining Board on the Pacific Coast.

He became a member of the American Public Health Association in 1882.

Dr. Hudson was distinguished by high professional attainments and remarkable executive ability, and was an earnest advocate of higher medical education. His kindly disposition and genial nature won him hosts of friends in other corps as well as in his own by whom his loss has been very deeply felt.

Professor H. Frey.

The Zurich school boasted of few more accomplished biologists or effective teachers than Dr. Heinrich Frey, who having retired after forty years' active work, lived but a few months in enjoyment of his well-earned repose. He was born at Frankfort-on-the-Main on June 15th, 1822, and at twenty-five years of age had qualified by brilliant preliminary studies for the post of *Docent* in the University of Göttingen. In 1848 the medical faculty of Zurich nominated him Extraordinary Professor, and in 1851 Ordinary Professor, in both of which capacities he more than justified his appointment. In 1855 he undertook the Professorship in the Polytechnic of Zurich, and also the post of Director of the Microscopo-Anatomical Institute. From 1854 to 1856 he also filled the position of Rector in the "Hochschule" with the greatest acceptance. Over and above his official duties, his work in the physiological laboratory was unremitting, and in the books he published on physiology he evinced such independent and thorough research, and such clearness and felicity of style, that they speedily found a far wider public than that to which they were primarily addressed. They were translated, indeed, into nearly every European language, and still retain their value as models of scientific induction and lucid exposition, particularly the "Histologie und Histochemie des Menschen" and the "Mikroscop und die Mikroscopische Technik." Besides his proficiency in the studies bearing directly on on his special department, Professor Frey was one of the most accomplished entomologists of Europe, and his contributions to entomology are at once among the most voluminous and most valuable of their kind. He was corresponding fellow of a large number of learned and scientific bodies on both sides of the Atlantic, and had not ceased to contribute effectively to their Transactions when death removed him, in Zurich, on the 17th ult., in his sixty-eighth year. —*The Lancet.*

Dr. J. B. Halsey

died at Baker City, Ore., in December last. He was one of the pioneer practitioners who crossed the plains in 1865, to enter the eastern part of the Territory. Since 1875, he had had his home at Baker City.

Dr. George D. Norris

died at Newmarket, Ala., aged 78 years. He was formerly Professor of Anatomy in the Baltimore Medical College. He was a graduate from Maryland University nearly sixty years ago, and had been a resident of Newmarket for more than half a century.

BOOK REVIEWS.

ANNUAL REPORT OF THE SUPERVISING SURGEON-GENERAL OF THE MARINE-HOSPITAL SERVICE OF THE UNITED STATES FOR THE FISCAL YEAR 1889.

This report from Surgeon-General John B. Hamilton is unusually voluminous and is replete with interesting matter. The United States Marine-Hospital Service, says Dr. J. B. Lindsley in his address before the American Medical Association last June, "has altogether outgrown its name and should be styled the United States Public Health Service." It has already successfully administered the affairs of maritime and interstate quarantine, furnished aid to sufferers from epidemics, and accomplished much good work in the line of scientific research. How satisfactory has been the character of the work accomplished by this service is witnessed in the complimentary resolutions (relative to the management of yellow fever) adopted by the Florida Legislature.

Among the many points of interest in the present report of the Surgeon-General is the concluding portion of the report of the yellow fever epidemic in Florida. This contains clinical records of a number of cases treated at Camp Perry; a general history of the epidemic is also given. An interesting paper appears on the subject of chagres fever. Considerable space is given to a description of quarantine appliances recently introduced in the service. The director of the hygienic laboratory, Assistant Surgeon Kinyoun, reports that a lengthy series of experiments in quarantine disinfection is about completed, and bacteriological investigations of various diseases are receiving much attention. Special investigations are also being made of Weigert's method of treating tuberculosis; the rôle played by the hands of nurses and assistants in the infection of wounds; of tuberculosis; of the pathogenesis of anaerobic microbes, etc. The report of Dr. Geo. Sternberg upon "The Prevention of Yellow Fever by Inoculation, Made in Compliance With Instructions from the President," gives a detailed account of the investigator's researches in Brazil, Mexico and Cuba, together with a reply to the charges made against Dr. Sternberg and Dr. Góes (of Rio de Janeiro) by Dr. Freire.

A number of selected cases from hospital practice and numerous reports of autopsies add greatly to the interest of the volume.

It is to be hoped that the day is not far distant when a public health department, adequate to the needs of the country, shall be established, and it is believed that it is the sentiment of the medical profession that the establishment of such a department with a Cabinet Minister at its head has already become a pressing necessity.

A Text-Book of Human Anatomy, Systematic and Topographical, including the Embryology, Histology and Morphology of Man, with special reference to the requirements of Practical Medicine and Surgery. By Alexander Macalister, M.A., M.D., F.R.S., F.S.A., Professor of Anatomy in the University of Cambridge and Fellow of St. John's College. With 816 Illustrations. Philadelphia: P. Blakiston, Son & Co. 1889.

The well known publishing house of P. Blakiston, Son & Co. have rendered valuable service to the medical profession of this country by bringing out an American edition of this valuable text-book. The volume is evidently a work of years. It was hardly necessary for the author to write that "the descriptions here given have been written in the dissecting-room, and checked over and over again by comparison with dissections." The evidences of original observation are manifest on every page. It deals briefly with the evolution of form; describes the nature and arrangement of tissues, and then passes to the study of the bones, the joints and the soft parts in the order in which they are to be considered in the dissecting-room.

Every organ and structure of the body is described with extreme fidelity, and the student of anatomy with this book in hand is well equipped for whatever work he has in hand. The illustrations are ample and beautiful and the text well suited in every respect to assist the student, and will prove an admirable book for reference.

In this volume of 750 pages students and physicians will find an unfailing guide in the prosecution of dissections and a book of ready reference in all anatomical matters. Whatever other works may be upon the shelf, this text-book added to the list will repay the investment.

SOCIETY NEWS.

ILLINOIS STATE MEDICAL SOCIETY.

Change of Date of Meeting.

Important Notice.

The annual meeting for 1890 will be held in Chicago the FIRST Tuesday of May, instead of the *third* Tuesday. This change is made on account of the meeting of the American Medical Association in Nashville on the latter date.

John Wright, President.
J. P. Mathews, Vice-President.
D. W. Graham, Perm. Secretary.
C. W. Earle, Ch'n Com. of Arr.

MISCELLANY.

LETTERS RECEIVED.

Dr. B. F. Harris, Langford, S. Dak.; Dr. L. L. McMurtry, Louisville, Ky.; Geo. P. Rowell & Co., New York; Dr. Jules Rouvier, Beyrouth, Syria; B. Westermann & Co., New York; The Drevet Manufacturing Co., New York; Dr. R. J. Dunglison, Philadelphia; Dr. A. P. Clarke, Cambridge, Mass.; Dr. Leartus Connor, Detroit, Mich.; Dr. R. M. Wyckoff, Brooklyn; Dr. A. Reeves Jackson, Chicago; Dr. E. P. Johnson, Norristown, Pa.; Dr. C. H. March, Wheeler Springs, Ark.; W. F. Holloway, Cuyahoga Falls, O.; Dr. Boesler, Peninsula, O.; Dr. Luis Ezpelosin, Caracas, Venezuela, S. A.; Dr. S. T. Armstrong, Cleveland, O.; Dr. J. A. Allen, Chicago; Stanley Day, New York; Dr. Chas. B. Penrose, Philadelphia; McKesson & Robbins, Maltine Manufacturing Co., New York; Dr. O. H. Haven, Youngstown, O.; Dr. Hal. E. Lyman, Detroit, Mich.; J. Walter Thompson, New York; Horlick's Food Co., Racine, Wis.; Farwell & Rhines, Watertown, N. Y.; W. F. Holloway, Cuyahoga Falls, O.; Geo. S. Davis, Detroit, Mich.; Dr. L. H. Wood, Highlands, Col.; The National Magazine, Chicago; Dr. R. C. Davis, Ann Arbor, Mich.; The Subscription News Co., Chicago; J. H. Bates, New York; N. Murray, Baltimore, Md.; Dr. E. Cutter, New York; Dr. J. C. Vincent, Allegheny, Pa.; Dr. D. F. Morris, Hoemisville, Neb.; Dr. N. Abel, Providence, R. I.; Dr. Richard Douglas, Nashville, Tenn.; Tri-State Sanitary Association, Mansfield, O.; Dr. J. E. Shadle, St. Paul, Minn.; Coronado Water Co., Coronado, Cal.; Dr. C. L. Lewis, New York; Dr. Thos. McIlwain, Marion, Ind.; American Pharmaceutical Association, Bridgeton, N. J.; Dr. W. B. Fletcher, Indianapolis, Ind.; Dr. J. F. Jelks, Hot Springs, Ark.; Parke, Davis & Co., Detroit, Mich.; Dr. D. N. Rankin, Allegheny, Pa.; Dr. David S. Booth, Jr., Belleville, Ill.; Galvano-Faradic Co., N. Y.; P. J. Mitchell, Philadelphia; "The Nightingale," New York; Dr. Chas. P. Lyman, Boston, Mass.; J. K. Miles, Philadelphia; Dr. R. C. Davis, Ann Arbor, Mich.; Dr. Chas. W. Earle, Chicago; Dr. Wm. O. H. Danforth, Worcester, Mass.; F. C. Vose, Brooklyn, N. Y.; Dr. A. B. Carpenter, Cleveland, O.; Dr. E. F. Cordell, Baltimore, Md.; Allen & Yates, Buffalo, N. Y.; Dr. R. H. Goodier, Hannibal, Mo.; Dr. H. F. Hazlett, Philadelphia; The Microscopic Journal, Trenton, N. J.; Dr. J. W. Long, Bryan, O.; Dr. A. M. Vail, Rock Rapids, Ia.; P. Blakiston, Son & Co., Philadelphia; Dr. S. K. Giffon, Haverford P. O., Pa.; Dr. J. Ohage, St. Paul, Minn.; Cincinnati Sanitarium, Cincinnati, O.; Chas. H. Philips Chemical Co., New York; Paris Medicine Co., Paris, Tenn.; Cranston & Co., Norwich, Conn.; E. B. Treat, New York; Dr. Harold Moyer, Washington, D. C.; Medical Herald Co., St. Joseph, Mo.; Reed & Carnrick, New York; George F. Lasher, Philadelphia, Pa.; Dr. J. E. Kendall, Parkersburg, W. Va.; Dr. N. D. Gueirry, Trinity P. O., Miss.; Thomas F. Goode, Buffalo Lithia Springs, Va.; Dr. F. W. Mercer, Chicago; Dr. Mary B. Tuttle, Burlington, Ia.; Drs. McKaskey and Love, Hamersville, O., Dr. M. H. Sears, Leadville, Col.; W. T. Keener, Chicago; J. W. Brown, Mottville, N. Y.; Dr. H. H. Foster, Delavan, Ill.; Dr. J. H. Smith, Dallas, Tex.; Carl Jenson, New York; L'Union Médicale du Canada, Montreal, Can.; Battle & Co., Century Chemical Co., St. Louis, Mo.; Dr. F. Johnson, Norristown, Pa.; Dr. Maris Gibson, Wilkesbarre, Pa.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from February 15, 1890, to February 21, 1890.

Lieut.-Col. J. R. Smith, Surgeon, is granted leave of absence for twenty days, to take effect about February 10. Par. 1, S. O. 15, Hdqrs. Dept. Ariz., February 6, 1890.

PROMOTION.

Asst. Surgeon Henry I Raymond, U. S. A., to be Asst. Surgeon with the rank of Captain; after five years' service, in accordance with the Act of June 25, 1874.

RETIRED.

Col. Andrew K. Smith, Surgeon, February 9, 1890. Act of June 30, 1882.

THE
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ORIGINAL ARTICLES.

TUMORS OF THE OPTIC NERVE, WITH REPORT OF TWO ORIGINAL CASES.

Read in the Section of Ophthalmology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY S. C. AYRES, M.D.,
OF CINCINNATI, O.

Diseases of the orbit present a very interesting group. They are very numerous, considering the size of the orbital cavity and its somewhat isolated location. Here we find tumors malignant and non-malignant originating in the orbit itself, in the optic nerve, in the globe, and afterwards invading the orbital cavity, as well as growths from the nasal fossæ and the cerebrum, which encroach on it from different directions. Each one of these subjects might well command our earnest attention, but I propose to mention one class only, tumors of the optic nerve. They are comparatively rare, there being at present less than seventy cases on record. With your permission I will give a hasty résumé of the literature at my command on the subject, and then give in detail the two cases which have come under my observation.

In Vol. xxv, Graefe's Archiv, Dr. Willemer, of Göttingen, reports twenty-two cases which had up to this time been reported. These include nine cases already reported in Vol. xix by Dr. Goldzieher, of Heidelberg, three of which he had himself operated on. He adds as an appendix five more cases, making twenty-seven in all. He gives a full and concise description of them macroscopically and microscopically, and an exhaustive statement of the various questions relating to growth, development, pain, probability of return, etc. It is a very comprehensive paper, and will well repay any one interested to read it carefully. Beginning with the case reported by Heymann in 1842, he gives in detail all the cases by Rothmund, Graefe, Sichel, Jr., Horner, Brailey, Goldzieher, Gruening, Leber, Alt, Mauthner, Holmes, Forster, Laquer and others, and gives in detail two cases observed by himself.

Dr. A. Vossius, of Königsberg, in Graefe's Archiv, Vol. xxviii, part iii, adds a contribution to the knowledge of the true optic nerve tumors, *i. e.*, those developed within the external sheath. He says in substance as follows:

Among the twenty-seven real optic nerve tumors described by Willemer, A. f. O., Bd. xxv, 1, the sarcomata play the leading rôle. These were partly fibro, partly glio-sarcomata, and most of them were combination tumors mixed with myxomatous tissue. Fourteen cases, or 52 per cent., were of sarcomatous character; six cases, or 23 per cent., were myxomatous; five cases, or 15 per cent., were fibromatous; one case was described as a scirrhus carcinoma, and one peculiar case was neuroma verum. The classification of all these cases has been very arbitrary, especially those described as myxomata and fibromata.

Imperfect methods of examination were the reason for inexact classification of tumors which were observed in past years. Pure myxoma and fibroma may be considered a rarity.

The size and consistency of the tumors vary; the more myxomatous tissue they contain, the softer they are. The external sheath surrounded the tumor in its entire extent, with but slight change in its structure; the external sheath and the tissue of the intervaginal space were chiefly involved. The optic nerve itself showed a variety of conditions; it lay either unchanged in the middle, or more or less eccentric in the tumor substance. On the other hand it was recognizable only at its commencement near the eyeball, while near the middle of its course it was completely lost. Usually only one eye was affected; in rare cases an extension of the tumor involved the intracranial part of the nerve as far as the chiasma. A case of von Graefe's is recorded where both nerves and the chiasma were almost completely involved in a tumor which extended backwards to the pons.

In a case of Leber's there was found a multiple knotty swelling of the optic nerve in a normal appearing eye, the cause of which was a tumor of the same character in the other eye, for which the first eye was enucleated.

The years of childhood appear to be especially predisposed to the growth of these tumors; as is likewise the case with the development of gliosarcomata of the retina, it is probable that both these varieties of tumors take their origin during fœtal life. Heredity has never been proven in the case of these tumors, yet very frequently their discovery soon after birth gives reason to suspect such an origin. Trauma is frequently the cause, both in childhood and in adult years.

The first and constant symptom of true optic nerve tumors is exophthalmos, with slow and painless development. The motions of the eyeball are not affected until late, because the muscles are not involved, and because no attachment takes place between the surfaces of the eyeball and tumor. A second important symptom is an amaurotic condition of the eye. A suppurative keratitis sometimes results from the exophthalmos, and finally a degeneration of the entire eyeball.

A return of the tumor following enucleation has seldom been observed. Five cases are reported of death following soon after enucleation from meningitis, and two cases of death after an interval of several years from propagation into the brain.

The first case reported by Vossius was in a boy 2½ years old. The parents say that a few weeks after birth a peculiar appearance of the left eye was noticed; within a year commencing exophthalmos was noticed. The papilla was very much swollen, of a whitish color, and the vessels very tortuous. The eye and tumor were removed. Microscopic examination proved the growth to be a myxosarcoma, and it was located in the intervaginal space.

His second case was in a boy 8 years old. Exophthalmos is said to have arisen the previous year after an attack of whooping-cough. There was white atrophy of the disc without indication of a previous neuritis. Two years later a firm elastic swelling could be felt below and behind the eyeball. Motion of the eye downward and outward was defective. Antero-posteriorly the tumor measured 42 mm., the greatest height 22 mm., and width 27 mm. The arachnoid sheath was thickened, but the chief part of the tumor arose from the tissue of the intervaginal space. A strip of hæmorrhage existed around the periphery close under the dural sheath. The color of the periphery was a moss green, while the middle was yellowish and lighter. A longitudinal section of the tumor mass shows an intricate fibrous network with numerous cells and more or less coarse connective tissue; occasional groups of myxomatous masses, among which were strongly colored balls and knotty masses; no nerve fibres.

In Graefe's Archiv., Vol. xxxiv, 1888, Prof. Dr. Schiess-Gemuseus reports a case of total myxosarcoma of the optic nerve removed with retention of the eyeball. It was in the person of a girl 12½ years of age. In childhood her parents noticed that she could not open the right eye quite as wide as the left, but recently it has become larger than its fellow. The ball is also turned downwards and outwards. Vision is reduced to $\frac{6}{12}$ and the optic nerve presents a pronounced choked disc. In September, 1885, three months after her first visit to the clinic, vision had been reduced to $\frac{6}{20}$ and a hard tumor could be felt with the finger between the ball and the upper edge of the orbit. He decided to try to remove the tumor and save the globe. The operation was a brilliant success and the girl still retains the eye, and so far there has been no reproduction of the tumor. The tumor has the shape of a rounded spindle, is completely surrounded by a dense connective tissue capsule, which is merely the external membrane of the optic nerve sheath. It was sausage-shaped, surrounded the nerve and pressed upon the eyeball, and was cut off close to the eyeball. At the rear end it pressed close upon the optic foramen; the length of the nerve enclosed within the tumor was 37 mm.; the transverse diameter close to the ball was 13 mm.; its greatest diameter was 20 mm. The surface of the tumor was covered with numerous smooth elevations and depressions; the covering membrane was easily removable from the substance of the tumor. A bile-like substance filled the tumor, resembling more a secretion than a tissue. Microscopically the tumor shows a number of circular or rod-shaped nuclei, with here and there some fine free fat cells. The whole seems to be composed of a more or less dense fibrous mass of uncommonly long, fine, delicate fibres, most of them containing somewhat oblong nuclei, others more round and occasionally quite long, rod-like nuclei; in general, each fibre contained one nucleus. The dural membrane encloses the tumor with an average thickness of $\frac{6}{16}$ mm.; processes extend into the body of the tumor from the dural sheath. The optic nerve fibres are everywhere sharply defined from the fibres of the tumor. The tumor is developed between the inner and the outer nerve sheaths. The thickness of the pial membrane varies from 0.6 to 0.12 mm. The integrity of the optic nerve is remarkably preserved; no trace of fatty degeneration.

Conclusions.—The pathological-anatomical examination shows with certainty that the tumor is not a neuroma, and that the nerve in its pial sheath is nowhere involved, the tumor being developed between the pial and dural membranes. Penetrating all through the fibrous structure of the tumor are very numerous blood-vessels having very thick walls. In many places there are peculiar œdematous spots. The growth of the tumor around the nerve was not everywhere equal in thickness, the nerve lying in some parts of its course against the dural sheath, in others in the middle of the tumor. The tumor has much similarity to those described by Willemer and Vossius as myxosarcomata (A. f. O., Bd. xxv and Bd. xxviii). The great vascularity and the thickness of the vessel walls are very characteristic; the entire tumor must have originated with a slow growth from the fibres of the arachnoid. It is remarkable to find the optic nerve retaining so nearly its normal condition, surrounded as it is intimately by a growth of such size and character. The pial sheath is broken through by the growth of the tumor in only a few places. The macroscopical form is similar to those described by Willemer and Vossius—spindle-form; the contents a soft, oozing mass.

The pathological-anatomical condition explains fully the reason of the varying state of the vision during the development of the tumor. The nerve, surrounded as it was by a soft, very vascular mass, suffered occasional compression, in consequence of which the choked disc was to be seen with the ophthalmoscope.

The present case is especially interesting owing to the preservation of the eyeball. Knapp was the first who removed a similar tumor without sacrificing the globe, but the eyeball was lost later through suppurative keratitis. Dr. Gruening, however, had a successful case, but the tumor was a small one (size of a hazelnut) and situated close to the eyeball.

Mr. Geo. Lawson, in the Royal London Ophthalmic Hospital Reports for January, 1888, reports a case of tumor of the optic nerve, which he says is the third one which has occurred in his practice.

In the reports of the hospital for August, 1882, is the first case. Here he says that "tumors of the nerve are comparatively rare and may occur in two ways: First, they may be external to the nerve fibres and spring from the dural sheath of the nerve; second, they may grow from within the nerve, being intimately associated with the connective tissue between the nerve fibres and constituting a neuroma." He then reports and illustrates a case where the growth originated from the dural sheath of the nerve. In the same number of the Reports is a case of so called "spurious neuroma" of the optic nerve, reported by Mr. J. W. Hulke. He says "that post-ocular intra-orbital tumors of the optic nerve and of the sheath are of such rare occurrence that the following case appears worthy of permanent record. The extremely slow rate of increase of the proptosis, indicative of correspondingly slow growth of the tumor, and the relative freedom of the movements of the eyeball, together with the normal appearance of the fundus oculi, had inclined me to regard exostosis as the most probable cause of the proptosis, and to reject as improbable a sarcoma or carcinoma of the orbital walls or optic nerve. This, however, proved erroneous."

The case is as follows: Caroline, æt. 19, a thoroughly healthy-looking brunette, was admitted on July 6, 1881, into the Middlesex Hospital. She had extreme proptosis of the right eyeball to the extent that even with a strong effort she could not close the eyelids, and sometimes in the attempt they slipped behind the eyeball. This occasionally happened in the act of winking, and it was so painful to her, and the effect so distressing to those about her, that she shunned society and was rendered more unhappy by this than by the loss of sight. The eyeball moved consensually with the other, and nothing unnatural could be felt within the borders of the orbit by pressure through the eyelids. Vision was reduced to quantitative perception of light. With the ophthalmoscope nothing unnatural was discernable in the optic nerve or retina. The external aspect of the eyeball was perfectly natural.

History.—An elder sister who accompanied her said that the unnatural prominence of the eyeball began to be noticed in her sixth year, and that its increase has been very gradual and unattended with pain, but with progressive loss of sight.

The eyeball and the tumor were therefore removed together, the optic nerve being severed close to the foramen opticum. The tumor was firm, of a spherical outline, in size about one-third less than that of the eyeball, from which it was separated by a portion of seemingly healthy optic nerve somewhat more than half an inch long. The extremely slow growth of the tumor (dating its beginning from the time when the protrusion of the eyeball was first noticed) is a remarkable circumstance, and one well calculated to lead to a mistake in diagnosis.

Structure.—The short piece of nerve that intervenes between the eyeball and the tumor is folded on the latter in such a way that the two bodies lie almost in apposition. Except for some thickening the dural sheath passes unchanged over the mass, but the loosely arranged fibres of the intervaginal space are enormously increased in the neighborhood of the entrance of the nerve into its front part. They also bear far more nuclei than normal. Towards the center of the tumor they gradually become replaced by an imperfectly fibrillated tissue containing numerous cell elements, of which the majority are small, perhaps .005 mm. in diameter. All gradations of size are found up to the largest, which are .026 mm. in diameter, oblong, and perhaps slightly drawn out at the ends, with several dot-like nuclei and numerous granules. The pial sheath and nerve fibres lose themselves in approaching the center of the tumor. The new growth appears to be a sarcoma taking its rise in the loose tissue of the intervaginal space, most probably from the nucleated cells found upon its fibres.

In the journal referred to above Mr. Lawson says: "Tumors of the optic nerve behind the eye, but within the orbit, are rare. In my own practice this is only the third case I have had. The first case was recorded in the Ophthalmic Hospital Reports, Vol. x, p. 296; the second in the fifth edition of my 'Manual of Diseases and

Injuries of the Eye,' p. 238; and the third is the case I have now to relate. In each of these the eye was blind.

"The symptoms in the following case were sufficiently pronounced to enable me to suggest that the growth in the orbit was probably a tumor of the optic nerve behind the eye. They were: A protrusion of the eye downwards and forwards, but the proptosis of only a moderate degree; steady loss of sight, first noticed with the commencement of the proptosis and terminating in complete blindness.

"The prominent symptoms which seem to indicate tumor connected with the optic nerve are proptosis, with early impairment of vision. The loss of sight in orbital tumors not connected with the optic nerve is caused either by the stretching of the optic nerve from the proptosis, or by the pressure of the growth on the nerve. There is seldom complete blindness unless the growth by its size has destroyed the functions of the optic nerve either by pressure or stretching. In this patient the defect of sight was an early symptom, which progressed to blindness before there was a sufficient stretching of the optic nerve to account for it, or a large enough growth in the orbit to produce it by pressure. Lastly, with the ophthalmoscope there was seen white atrophy of the optic nerve, with enlarged retinal veins, evidently due to the pressure of a tumor on the nerve, and, from its comparatively small size, probably directly connected with it.

"Edward R., æt. 12, admitted July 25, 1887.

"*History.*—Two months ago his left eye was first noticed to be 'larger' than his right; since that time it has gradually increased and the sight has gradually failed in it. He has not had any pain in the eye, but headache, frontal and behind the ear on his left side at times.

"*State on Admission.*—Left eye proptosed and misplaced forwards and downwards; movements of eyeball good. At the upper and inner part of the orbit is felt a hard mass extending backwards in close contact to the roof of the orbit. There is no nasal obstruction or deafness, no posterior palatine growth, and no glandular enlargement. He has no perception of light with the left eye; the pupil is inactive to light. By ophthalmoscopic examination the disc is seen to be white and the margin blurred, the veins big and tortuous and obliterated in places near the margin of the disc. T. n. The right eye is normal.

"He introduced a speculum between the lids and excised the eye with the tumor around the nerve *en masse*. Behind the globe, which upon examination presented nothing unusual, was a tumor surrounding the optic nerve and extending backwards from the sclerotic a distance of 23 mm. In its widest part its diameter was 18.5 mm. Irregularly pear-shaped, with the smaller end forwards and with a lobulated surface, it was entirely enclosed in the optic nerve sheath. At the posterior limit of the growth, where the nerve emerged, it and the sheath were in contact, but the nerve was somewhat thickened. The tumor was fairly firm to the touch, and near its anterior end were felt one or two small cysts beneath the capsule.

"*Microscopical Examination.*—The new growth is a sarcoma of loose connective tissue type, which in parts is undergoing myxomatous degeneration. In those parts which are apparently free from this change the stroma is finely fibrous and forms in places a delicate reticulum resembling that met with in lympho-sarcoma, with this difference, that there are no cells in the meshes. Throughout the growth the cells are very loosely arranged and there are no clumps of cells, such as are usually met with in the true myxo-sarcomata. The cells are round and oval, but the former largely predominate. No spindles were found. There are numerous small areas of myxomatous degeneration, but in no section were there found the translucent spherules described in tumors like this one by Vossius, Leber and others. A few vessels in the growth show marked hyaline degeneration of their walls, which are greatly thickened and their lumen almost obliterated; but in none of the sections examined were there any hyaline appendages to the degenerated vessels.

Scattered through the optic nerve are large numbers of cells, which are identical in appearance with the cells of the new growth. The nerve fibres show little if any change, but the trabeculæ are thickened. The pial sheath can be traced unbroken over the thickened nerve, but it is being invaded by the tumor cells. The dural sheath, which is but loosely attached to the tumor, is not implicated. Though it is impossible to tell with certainty the site of origin of the tumor, it is most probable that it grew from the connective tissue of the inner sheath, or from the loose tissue of the intersheath space."

Wolfheim, in his inaugural dissertation, December, 1887, Königsberg, collects together the cases of tumors of the optic nerve which have up to that time been published (42 cases up to 1884). He adds to them those of which up to this time no mention has been made since 1884. He gives a detailed account of a new case, so that the total number of published cases amount to 61. The sarcomata were the most numerous, amounting to 49.

The new case was as follows: It was in the person of an eight-year-old boy, in whom the left eye had become gradually more prominent. There was pronounced swelling of the papilla. On the temporal half of the papilla, at the junction of some small blood-vessels, lay three small, round hæmorrhages. Digital exploration of the orbit revealed a firm tumor probably connected with the optic nerve, of an irregular surface, which extended back to the region of the optic nerve. The optic nerve was severed close to the optic foramen and removed with the globe.

The tumor began 7 mm. behind the globe and presented a post-horn shaped outline. The length of the growth was 27.5 mm., its breadth 21 mm., and its height in the middle 24 mm. The growth was covered with a strong capsule, which constituted the immediate continuation of the dural sheath of the optic nerve. When incised it presented a homogeneous appearance. The result of the microscopic examination showed it to be a genuine spindle-celled sarcoma with partial myxomatous degeneration. At the same time it was very vascular and filled not only the sub-dural space, but had extended from the pial sheath into the nerve itself, and apparently had inserted itself in the trabecular, projecting into the trunk of the nerve.

In the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, December 10, 1887, Dr. George E. Frothingham reports two cases of tumor of the optic nerve occurring in young people, one a lad of 7 and the other a girl of 17. In both the eyes were enucleated with the tumors. In one case there was a papillitis, in the other there was not.

In the case of the boy the tumor involved the entire substance of the optic nerve from the foramen to the globe. It was $1\frac{5}{8}$ in. in its long, and $1\frac{1}{16}$ in. in its short diameter. In the other case it was not quite so large, and the ocular end of the nerve was free for about half an inch. Both were round-celled sarcomata. No return to date.

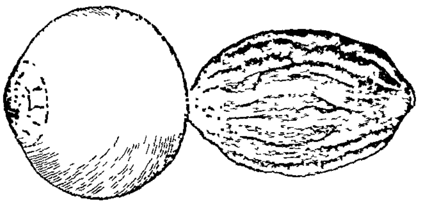
In the *American Journal of Ophthalmology*, Vol. i, 1884, p. 243, Dr. Aub reports a case of myxosarcoma of the optic nerve. It was in the person of a married woman, age not given. The microscopic examination was made by Dr. Alt, of St. Louis. He says it consists chiefly of spindle-shaped and stellated cells. In many parts of the growth the mucoid substance is accumulated in the form of smaller and larger cysts of irregular and round shape.

I come now to the first of my own cases: J. D., æt. 12, was seen for the first time July 18, 1886. He said the right eye had been amblyopic since last spring. There was no history of trauma and he had not suffered any pain, but had continued in school all the time until impairment of vision and probably diplopia had attracted his attention to the eye. There was a slight exophthalmos and vision was reduced, T. 1. The mediæ were clear. There was well-marked optic neuritis, the disc was swollen and quite prominent, and the vessels upon it obscured. Vision was reduced to the perception of shadows of the hand outwards and downwards. As there was no reason to suggest or recommend an immediate operation, I put him on a course of kali. iod. and ordered him to come back again in a month.

In August his vision was slightly better; he could count fingers at one foot. I saw him again in October, and his vision had improved to counting fingers at five feet. The swelling of the optic disc had subsided considerably, but there were evidences of optic nerve atrophy coming on.

I did not see the patient again until April 5, 1888. At this time there was a marked change in the appearance of the eye. Vision was entirely obliterated and there was atrophy of the optic disc. There was proptosis of the eye, and a tumor or growth of some kind could be felt in the upper and outer portion of the orbit. It felt firm but somewhat elastic. Motility of the eye was unimpaired. April 9th I made the operation, hoping that I might be able to remove the tumor and save the globe. I made a free incision through the conjunctiva parallel with the external rectus muscle, and then another incision close to the cornea at right angles to it, severing the external rectus muscle, leaving a little stump attached to the sclera, in case I should want to unite the cut ends of the muscle. After passing my finger along the tumor and exploring its location and size as well as I could, I became convinced that it would be impossible to save the globe and remove the tumor.

I then proceeded to remove the globe and afterwards the tumor. There were no special difficulties in the case and the globe was severed close to the optic foramen.



Macroscopic Appearance.—The tumor was spindle-shaped, or rather sausage-link shaped. It was quite regular in outline and was enclosed in a thick, firm capsule. Its outer surface presented a wrinkled or corrugated surface. It was 28 mm. in length, and 20 mm. in diameter at the thickest portion. It was quite firm and solid.

Microscopical Examination by Dr. James M. French.— Preparatory to microscopic examination, the specimen was hardened in Müller's fluid and absolute alcohol. Sections were then cut $\frac{1}{500}$ inch in thickness and part of them stained in hæmatoxylin, part in alum-carmine.

On examination the growth was found to be a sarcoma of the small round-celled variety, very vascular and in some parts supported by an abundance of fibrous tissue, but for the most part exhibiting a large amount of mucoid tissue, and consequently belonging to the class designated "myxosarcomata."

The tumor mass completely surrounded the optic nerve, which still remained visible, even to the unaided eye, at a point near the centre of the transverse section. The small round cells which constituted the most striking feature of the growth were of nearly uniform size, measuring from about 3.5 *mm.* to 5.0 *mm.*, each containing a distinct nucleus and more or less granular protoplasm. The intercellular spaces are filled by a colorless, translucent substance, in some parts amorphous, but in most parts marked by an exceedingly delicate fibrillation. In the more translucent regions were found in considerable numbers the indistinct fusiform and stellate cells with long, delicate prolongations characteristic of mucoid tissue.

Fibrous tissue bands of variable width subdivided the neoplasm into numerous compartments of varying form and size, but never very large. In these the cells rested without definite arrangement. The fibrous tissue is everywhere very vascular. In some places the blood-vessels are of large size with firm muscular walls; in others mere spaces without defined walls. As in all sarcomata, these blood-spaces are abundant in the cellular portion of the tumor, appearing like narrow channels washed through the mass of cellular tissue. Along the course of the blood-vessels, particularly those of comparatively large size, pigment has been deposited, partly as a diffused yellow-brown stain, partly in a granular form. In some places this discoloration is decided, in others but very slight.

The optic nerve was found invested in a much thickened pial sheath which completely separated it from the surrounding neoplasm. The nerve had, however, undergone marked degenerative change. The fibrous tissue envelope of the nerve fibres (neurilemma) had undergone a decided thickening (sclerosis), producing an equally decided atrophy on the nerve fibres. Scattered throughout the substance of the nerve were a large number of amylaceous bodies, some of which were intact and exhibited the characteristic parallel lines, others had been fractured, probably in the preparation of the specimen.

The tumor had for its envelope the external fibrous sheath of the optic nerve. This had, however, undergone decided thickening, and was so loosely attached to the neoplasm that a considerable portion of it was unavoidably detached in the preparation of the specimen for microscopical study. In addition to the increase in thickness of this sheath, there was a very manifest increase in the number and size of the blood-vessels. Numerous pigmentary deposits were also found, and in a few places cyst-like openings. In some portions there were also evidences of the extension of the neoplasm into the meshes of the fibrous tissue; it was nowhere found, however, to have involved the entire thickness of the sheath.

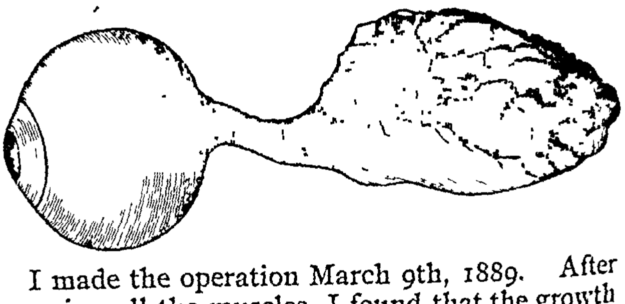
The appearances obtained from a longitudinal section of the growth were not materially different from those just described. The alveolar spaces, if such they could be called, presented a little greater average length, showing that the bands of fibrous tissue forming their walls to a certain extent followed in its course the long axis of the growth.

The fibrous tissue envelope of the neoplasm was found to be continuous at the extremities of the tumor with the dural sheath of the nerve, thus supporting the supposition that the growth originated in the connective tissue of the nerve sheath. There has been no return of tumor up to date.

My second case was in the person of a young lady. Miss Nellie S., æt. 22, a strong, well developed young woman in excellent health, when 8 years old fell while playing on the ice and struck the back of her head. She was insensible for a short time and there was tenderness in the back of the head which continued for three months afterward. About two years later she had an attack of malarial fever; there was some swelling and œdema of the lids, and while testing her vision she discovered that her right eye was nearly blind.

I saw her first in 1880, about seven years after the accident above referred to. At that time there was atrophy of the optic disc and vision was reduced to *nil*. There was a slight prominence of the eye and a slight divergence. There was no pain, and the eye gave her no inconvenience except from loss of vision.

I have seen her from time to time up to the present year, and there has been a gradual increase in the prominence of the eye. There have also been shooting pains occasionally in the orbit and in the right side of the head, which have increased recently. The eye now stands about 7 mm. in advance of its fellow. The motions are perfect in all directions, and it is not possible to detect any tumor by pressing the finger between the walls of the orbit and the globe. The ball cannot be pressed into the orbit.



I made the operation March 9th, 1889. After severing all the muscles, I found that the growth was very firmly attached to the apex of the orbit and it was with some difficulty that I detached it. It came out entirely, leaving the bony wall of the orbit smooth. There was a mild orbital cellulitis following it but it seemed to subside quietly and she returned home in about ten days. After her return home she seemed to do well for about two weeks when she was attacked with typhoid fever from which she died about six weeks after the operation.

Macroscopical appearance of the tumor: It was triangular, or rather irregularly pyramidal in shape. The base of the pyramid was attached to the inner wall of the orbit. The growth was enclosed in a strong capsule which presented a uniformly smooth surface except inward where there were three small elevations or nodules. It appeared as if the tumor had made an attempt to perforate the capsule at these points. The optic nerve was not involved for a distance of 8 mm. from the globe. The base of the tumor (the portion attached to the bone) measured 25 mm. in length and 14 mm. in breadth. The surface measurement of the tumor on its longest side was 40 mm. and its shortest 20 mm. It measured 20 mm. in thickness. Macroscopically it presented a pinkish grey color and was of homogeneous consistency.

Microscopical examination: The specimen after being thoroughly hardened was first cut transversely at a point near its middle. Ocular examination of the cut surface revealed an almost homogeneous mass: a few linear subdivisions were however visible on close inspection. No evidence of the optic nerve could be discovered. The tumor was enveloped in a thin fibrious capsule which was manifestly continuous with the external sheath of the optic nerve projecting from its extremity.

Microscopic examination showed that the tumor was a myxo-sarcoma, the cellular elements of which were of the small spindle variety. The cells throughout the greater part of the section were closely aggregated with a very little intercellular tissue, and this was for the most part amorphous in character. The growth was however sub-divided into numerous small and very irregular compartments by delicate bands of fibrous tissue. These supported blood vessels of embryonic character. Similar blood-vessels or channels were visible throughout the cellular masses. The growth was not however remarkable for its vascularity. The course of the spindle cells was peculiar and interesting. In some portions of the growth cells were seen which had been cut longitudinally and therefore appeared as perfect spindles, and in other portions, as is usually the case, cells had been cut obliquely or transversely, causing them to appear oval or round.

In one portion of the growth corresponding to the central region of the tumor, there was a peculiar circular or whorled arrangement of the cells. The center of these whorls was found to be the axis cylinder of an optic nerve fibre. These fibres were found so widely separated that the space occupied by the remains of the nerve was more than four times the normal diameter of the optic nerve. The nerve fibres had undergone marked atrophy. Numerous amylaceous bodies were also present in the same region of the tumor. The pial sheath of the optic nerve had been so incorporated with the new formed tissues, or so completely replaced by them as to be indistinguishable.

In the longitudinal sections the appearances were not materially different from those observed in the transverse cut, so far as the neoplasm was concerned. There was abundant corroborative evidence of the persistence of nerve fibres in the region of the growth that has been described. The mucoid tissue seen in the transverse section was even more apparent in the longitudinal, resembling in some parts broad bands of translucent tissue with a few nucleated cells and in some instances surrounding small islands of neoplastic cells.

The external sheath of the growth was found to be continuous with that of the optic nerve and there was no evidence of its having been invaded by the disease.

The two cases I have observed resemble several of those already reported but especially those of Schiess-Gemeseus and Mr. Lawson. In the case of the former however the macroscopic appearance was very unlike that of most if not all of the cases. He says that a bile-like substance filled the tumor, resembling more a secretion than a tissue. In nearly all the cases the tumor was firm and elastic if not quite solid.

I have added to the sixty-one cases reported by Wolfheim, six new cases, viz.: one by Mr. Lawson; two by Frothingham; one by Aub, and two from my own practice. All of these but one (that by Aub) occurred in young persons, and in this one the age is not given.

Two of these six cases may be classed with the sarcomata, and four with the myxo-sarcomata. The number reported to date do not furnish sufficient data from which to draw any very definite conclusions as to pathology and prognosis. There has been heretofore a somewhat arbitrary classification of these cases, but the present exhaustive and critical microscopic examinations will place each case where it belongs.

We may say in general that these tumors occur more frequently in the young, that they are very slow of growth (as illustrated by my second case), that they are sometimes congenital as in the case reported by Vossius, and that they may be of traumatic origin.

Microscopically they are sarcomata or myxo-sarcomata. One of the prominent symptoms to aid in differentiating between a tumor of the optic nerve and a sarcoma of the orbit, is the almost unimpaired motility of the ocular muscles in the former.

THE DISABILITIES OF INEBRIETY—AN INQUIRY RESPECTING THE NATURE OF DRUNKENNESS, AND OF ITS RESPONSIBILITIES.

Read in the Section of Medical Jurisprudence, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY T. L. WRIGHT, M.D.,
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Confident assertions respecting the nature and responsibilities of the drunken state are unwise, and very often are unjust. As a matter of fact, drunkenness does not always represent the same condition of the human organism. It does not owe its *origin* in different persons to similar causes. Its *progress* is extremely unlike in separate individuals. Its *consequences* are various and dissimilar in fundamental and decisive particulars. Moreover, the causes which incite to drunkenness may become modified, as physical impairments and degenerations are developed within the structure.

One of the leading elements that enters into the nature of drunkenness is paralysis. This disability is not a consequence of intoxication, but is a component part of it. Attention to this fact will furnish the key to an explanation of the wide range of incentives which lure to alcoholic excess. In the human economy the nervous system is paramount. It not only controls the sensibilities and movements of the body, but it has authority over the mental and moral expositions.

But wheresoever sensibility extends—whether in the physical structure, or in the intellectual movements, or in the moral exhibitions, there too, may sometimes be found instability of nervous function, irregularity of nervous coöperation, and asperity of nervous feeling. What can be more effective in blunting the morbid acuteness of neurotic sensibility than paralysis—the partial paralysis of alcohol?

The applicability of the alcoholic impression, therefore—delusive and disappointing as it may prove in the end—embraces every department of human nature.

To illustrate the distinctions which may characterize the qualities of drunkenness, I will note the features of the drunken state as seen in the *casual* drinker; in the *periodic* drunkard; in the *habitual* drunkard; and in the *chronic inebriate*—that is, in drunkenness associated with fixed and unchangeable structural degenerations.

Casual drunkenness is an interesting study, as it unfolds the nature of alcoholic intoxication without its complications. This form of drunkenness is usually fortuitous, and without premeditation; and when the occasion is passed, and the drunken spell is over, the person implicated returns without reluctance to his customary avocations and habits.

In a space of time surprisingly short after partaking of alcohol, there is induced a state of partial paralysis that extends throughout the nervous system. Paralysis is not an offshoot, a complication of drunkenness, but is a part of it.[1] The characteristic phenomena of intoxication are largely due to disqualifications and inaptitudes arising from the presence of partial paralysis. It is obvious that the nervous incapacity resulting from the alcoholic influence extends all the way from slight incompetency of nerve, to absolute unconsciousness—according to the quantity of the poison taken into the system.

A distinction should be recognized between the disqualifications of simple weariness, and those arising from the paralysis of alcohol. The former are physiological, and are never withdrawn from the supervision of the volitional powers; the latter are toxic, and they are removed from the control of the will. However, the disabilities imposed by the alcoholic influence upon the will are not necessarily of direct application; but, being universal in the organism, they aid to more completely overthrow the power of will through injury to the other capacities.

Alcoholic paralysis does not appear to be uniform in the strength of its impression. Occasionally the motor nerve centres seem to be greatly overcome, while the rational faculties may not be correspondingly affected. Again, the reverse may be true—the drinker being rather steady in his muscular movements, while he is helpless in his intellect. The special senses may also show varieties in the extent of their disabilities. Illusions often deceive the sight, while the senses elsewhere are not seriously affected. Common sensation is impaired; and being dull and inactive, the imagination may accept outside suggestions (or, possibly, inward impulses), as to the nature of things—falsely believing that the qualities suggested are manifested in sensation. There is nothing more conducive to deceptive beliefs than anæsthesia. From these, and analogous disabilities, all springing from paralysis, the phenomena of pure drunkenness are evolved and presented to open view.

Drunkenness largely consists of incoherent movements in the great departments of man's nature. If alcohol produced an uniform effect upon all the nervous powers, the result would be *universal defect*, not *unequal defect*. It would be imbecility, not drunkenness. Nevertheless, it does not follow that an equal paralytic *impression* must result in equal paralytic *effect*. The impressibility of the nervous system is unequal and varies in its several departments. Hence sometimes may be seen the spectacle of seeming excitement in certain nerve centres arising, in fact, from the paralysis of other nerve centres; disturbances in the inhibitory centres are very liable to produce such effects. From these considerations it seems probable that an application of some abnormal force, either to exalt or depress the universal nervous system, would produce an *unequal* and *distorted* display of nervous function.

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[1] The fact of alcoholic paralysis is supported by such names as Hughes, Crothers, Poole, Mann, Brower, Mason, Parrish, Kerr, Kowalewsky, and others.

When a person partakes of alcohol for the purpose of hardening his feelings in order to commit crime, he surely is accountable for the criminal act. In this case, the alcohol is taken as auxiliary to carrying out a purpose previously formed. The intent preceded the act of drinking, and it was formed when the mind was sober. The action of alcohol is here that of a subsidiary instrument in the execution of an offense already determined on.

It will be well to inquire before proceeding further, what the principles of the law are respecting the criminal responsibility of inebriates. "The law assumes," says Hon. Clark Bell,[2] "that he who, while sane, puts himself voluntarily into a condition in which he knows he cannot control his actions, must take the consequences of his acts." Another proposition is appended, namely: "and that his intentions may be inferred." In another place the statement is in this form, to wit: "That he who thus voluntarily places himself in such a position, and is sufficiently sane to conceive the perpetration of the crime, must be assumed to have contemplated its perpetration."

The whole force of the legal apothegm turns upon the words: "in which he knows he cannot control his actions." The assumption is that while sober and before drinking the man knows he cannot control his actions when intoxicated, and *therefore* he is rightfully held to accountability for his drunken conduct. The further assumption that he intended to perpetrate crime, from the fact that he did commit it, is based upon the same hypothesis, namely: he *knew* when he partook of alcohol, that he could not control his actions, therefore "he must take the consequences of his acts."

There are those who will claim that these legal assumptions are not based upon thoroughly ascertained facts—that they are entirely too sweeping and comprehensive. That a drunken man is in such a condition that he cannot control his actions is true. He has the conditions of crime: distorted perceptions, feeble judgment, paralyzed conscience and imbecile will, established by alcohol within his nature.

The question is, has the drunken man voluntarily placed himself in a criminal attitude, at the same time knowing the consequences of his act? How many people *know* that alcohol will partially paralyze the whole nervous system, depriving the inebriate of the natural use of his physical, mental and moral powers? The drunkard does not know these facts. He does not believe them. He may imagine—if he is criminal in intent—that alcohol will *nerve* him for the deed which he may contemplate. Alcohol does not *nerve* the criminal mind at all. It unnerves, paralyzes the moral instrumentalities, and thus it reduces the drunkard to the level of the brute, the insensate reptile.

Every man supposes, ordinarily, that he will always be able to control his actions. While yet sober, he feels competent to foresee, provide for, and properly conduct all of his inebriate movements. He is apt to believe that the evils of intoxication are the outcomes of a mind naturally reckless and wicked, rather than of any special properties belonging to alcohol. The drunkard himself is of the opinion that an intoxicated person can control his actions if he desires to do so; and the strange part of his belief is, that it is founded upon his false notions respecting his own drunken powers. The sound mind cannot mark out lines of conduct for the same mind unsound. If it could insanity itself would be scarcely a defense for crime.

The *consciousness* of sobriety is on a different plane from that of drunkenness. The powers and qualities of one state are distinct from, and unlike those of the other. For this reason, a man who, when sober, has his mental faculties in perfect order, cannot conceive of himself as bereft of them when drunken. If the drunkard knew these facts, then he would "know that he cannot control his actions" when intoxicated; and the conclusion might justly be "that he must take the consequences of his acts." But he does not know them, and while sober and sane he cannot think of them as possible. His *sound* consciousness is ignorant of, and is incapable of recognizing anything in common with, the *impaired* consciousness of drunkenness.

There is a peculiar form of inebriety that has been classified as truly a disease. It is known as neurotic, or periodic drunkenness. It comes on at uncertain intervals of time. The intoxication itself is of the utmost violence. The strongest liquors are chosen, and they are consumed with a haste and ardor bordering on frenzy. The drinking bouts continue for a number of days. They are attended by several periods of alcoholic unconsciousness — the stupor being repeatedly slept away, and immediately thereafter brought on again by renewed potations. After several days of heavy drinking, the neurotic desire for intoxication dies out. Liquor is abandoned altogether; and, indeed, it is probably viewed with feelings of disgust. The period of sobriety may continue for days, and often for weeks—only to be interrupted by a sudden renewal of all the characteristics of unmanageable and unbounded intoxication. In the neurotic inebriate, drunkenness is carried to the utmost limit of human endurance, and the paralytic disabilities are more profound in him than in other drunkards.

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[2] Med. Jurisp. of Inebriety, p. 7.

The incentives to drinking differ widely in the neurotic inebriate, from those of the casual drinker. They are described to be of overwhelming force. The impulse for intoxication arises out of a condition of the nervous system which seems beyond the control of volition. With respect to the power of the will in periodic inebriety, there have been differences of opinion, and also some very positive assertions. Constitutional tendencies may abate, as life progresses, or they may change their forms and features by transmutation. In such ways the intense desire for intoxication may sometimes disappear, and the convulsive drunkard may seem to be actually "cured." These provisos being understood, it will be proper to adduce some authorities to show the nature and strength of the desire for intoxication which consumes the neurotic inebriate.

Alienists usually designate spasmodic drunkenness by the term *dipsomania*. They view it as a special form of inebriety, totally differing from all others in its causes, progress and termination. They class dipsomania with the insane neuroses —that is, with certain well known phases of nerve instability that are universally admitted to be in close alliance with insanity. A few authorities only will be given indicative of the general tenor of opinion amongst those best qualified to speak on this part of the subject; and it will appear that the heredity of this form of drunkenness, as well as its kinship with insanity, is fully conceded by them. These are points of consequence in deciding whether certain cases of drunkenness are "voluntary;" and also whether the spasmodic drinker may be supposed to "know" what will be the consequences of intoxication in his own person.

When treating of *heredity*, Maudsley divides the subject into three branches: 1. Heredity of the same form. 2. Of allied forms. 3. With transformation of neurosis. Of heredity of the same form the author says: "that is, when a person suffers from the same kind of mental derangement, which he seldom does, except in cases of suicide or *dipsomania*." Dr. M. says in another connection: "An individual inherits from his parents not only their family nature, . . . but something from their individual characters, as these have been modified by their sufferings and doings, their errors and achievements, their developments or their degradation." Our author declares that "epilepsy, paroxysmal neuralgia, strong hysteria, *dipsomania*, spasmodic asthma, hypochondriasis and suicidal melancholia may predispose to mental derangements in the offspring, as, conversely, insanity in the parent may predispose to other forms of nervous disease in the offspring." [3]

Dr. Blandford[4] speaks as follows: "The particular character of the mania or melancholia depends upon the constitution of the individual, . . . and the same person may at one time be maniacal and at another melancholic. It is true we frequently see the same form in successive generations, *e. g.*, suicidal melancholy and *hereditary drunkenness*." Again Dr. B. says: "Intemperance is increasing rather than diminishing. Hence, I believe, springs the ever renewed insanity of our lower orders. My opinion is that, amongst the lower classes, insanity is on the increase. . . . There is a degree of drunkenness amongst the lower classes that is not found in the higher."

Dr. Bucknill says: "Inquiry into the habits will often discover cause for the production of insanity; habits of *intemperance* for instance, and habits of strong mental excitement." Such men as Bucknill and Blandford find no difficulty in recognizing alcohol as a cause of insanity. Bucknill is at pains to assert that "*strong drink* does often cause disease of the nervous system with disturbance of the mental faculties; and also that such diseases coming from other sources, do give rise to the passion for drink. These are facts that can admit of no doubt. The heredity of such cases and their periodicity are well known to physicians who have made madness their study."[5]

"When mental disease is transmitted, does the form of insanity descend?" is the inquiry of Dr. Tuke. In reply he says: "very frequently this is the case." Dr. T. then gives authorities testifying as to the direct descent from ancestry of hallucinations, monomania, melancholia, mania, general paralysis and idiocy; and he remarks upon his own authority: "Of *dipsomania*, the cases are so common that it is not necessary to detail examples." Tuke quotes from Stewart, of the Crichton Institution, a table showing the descent *in the same form*, of different insane neuroses. In this table *dipsomania* is said to descend as such in 63 per cent. of cases.[6]

Dr. Wynter speaks to the same effect, and classes *dipsomania* with the insane neuroses. Winslow declares: "I do affirm that in estimating the *amount* of punishment to be awarded, it is the duty of the judge to consider the physical condition of the culprit, . . . and *above all*, whether he has not sprung from *intemperate*, insane, idiotic and criminal parents."[8] Unfortunately for this reasonable sentiment, if a person is responsible at all, he is, in the eyes of the law, fully responsible.

It will be perceived that the authorities quoted are men distinguished as practical alienists, and as conclusive writers on the subject of insanity;

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[3] Pathology of Mind, pp. 91–107, 108.

[4] Insanity and Its Treatment, pp. 139–145.

[5] Psychol. Med., p. 401; Habitual Drunkenness, p. 57.

[6] Psychological Med., pp. 67–70.

[7] Borderlands of Insanity, p. 49.

[8] Lectures on Insanity, p. 156.

and that they classify dipsomania with the insane neuroses.

But notwithstanding all this, the distinguished jurist, Hon. Noah Davis, of New York, speaks as follows: "Doctors are very apt to fall into the idea that inebriety should of itself act as an excuse for crime. It may perhaps act justly, in some cases, as a modification of the guilt, in the mind of an intelligent judge, to grade the crime or affect the sentence." No one thinks of excusing inebriate crime upon the plea that drunkenness is merely a physical disease, except in so far as disease may contribute to the production of mental and moral incapacity. But Judge Davis himself declares: "there is no excuse or defense for crime in insanity, because *where insanity exists there is no crime*."[9]

Sometimes there appears to be a gradual elimination of the constitutional crave for intoxication. This may be disguised, however, by the facts of habit and automatism. But the habit being once broken, or rather interrupted—as by some sudden and powerful excitement—the neurotic inebriate may then discover that the terrible longing for intoxication no longer vexes him. He is now credited with a "voluntary" reformation; and he is considered to furnish an exemplification of the notion that the dipsomaniac may reform when he chooses, and also, that he can choose to reform. But there is little doubt that this apparent reformation of the neurotic inebriate is sometimes the result of transmutation of neurotic forms—some particular neurosis, perhaps not always easily detected, taking the place of the dipsomaniacal crave. In such a case there will likely be, sooner or later, a relapse into dipsomania.

There are some considerations which may cast a doubt upon the correctness of the legal assumption regarding the responsibility of the neurotic inebriate. One is, it is *possible* that the drinker may not "voluntarily" have placed himself in a state of intoxication. Another is—it is *possible* that he did not "know" that he could not control his actions when intoxicated.

The continuous repetition of violent intoxication in periodic inebriety, begins at length to inaugurate physical changes and degenerations of the most extensive and serious character. Violent intoxication produces an excessive strain upon the heart and blood-vessels. The frequency of the pulse is increased. The heart itself is made "tense and full," and its walls become weakened and dilated, and its valvular structure is injured. The arteries are stretched, and their elasticity is enfeebled, and the veins become enlarged. "There is," says Dr. B. W. Richardson, "dilatation of the heart with stretching of the valves, especially the semilunars." These injuries to the circulation impress the mental and moral powers unfavorably. Heart disease may cause insanity. Here is a physical condition which aids the neurotic feelings in overcoming the will, and lessens the volitional power to abstain from drink. Heart disease is a common trouble with the periodic drunkard. A large proportion of such persons learn to take alcohol for "palpitation" and "fluttering" of the heart, being ignorant that the temporary relief thus attained, is at the price of increasing and intensified cardiac disorder.

A remarkable disability that is liable to affect the periodic inebriate has been called *alcoholic trance*. Although trance may occur in nervous constitutions without the intervention of alcohol, the toxic effects of that agent exert a peculiar influence in producing it. Alcoholic trance seems to be associated with a deranged consciousness. The person affected presents a dazed and preoccupied appearance. The life of relation is automatic. It is not always easy to detect the trance state, and the person affected is totally ignorant of its existence. Trance may last for a few hours or for many days. Consciousness exists on a plane below its normal level. It is not actually wanting; for a series of consecutive movements attest a certain degree or condition of conscious life. While in the trance state, the consciousness that is connected with automatic existence is separated and disrupted from normal and perfect consciousness. Hence, when trance is present, the events of the normal surroundings—which indeed appertain to normal consciousness—are not noticed; and the remembrance of events then taking place is impossible after the mind resumes its natural functions. Trance life is a blank in memory, and is unknown to all the realities of a healthful existence.

But the great and important fact in the phenomena of alcoholic trance is this: the trance condition is separated completely from healthful consciousness. It has no relations with the rational past nor associations with a rational future. The mind is deprived of the experience and knowledge that might be drawn from its material surroundings, in the formation of such judgments as are necessary for its intelligent guidance, in matters of motive, will and conduct. No man can act with sound responsibility, when he is deprived of the power to know what are the relations and sequences of passing facts.

It is known that morbid changes in the connective substance of the body may be produced by the alcoholic influence, affecting the well-being of the general structure. Entire organs are affected, and nervous and muscular degenerations take place.

It happens at length that the deteriorations and injuries produced by alcohol, themselves, become incentives to intoxication. The proclivity to periodic drunkenness vanishes, perhaps altogether; while the increasing distress, arising from the various physical degenerations of alcohol, calls without ceasing for the lethal influence of intoxication. And so it is, that the periodic inebriate becomes transformed into the daily sot—the *habitual drunkard.*

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[9] Med. Jurisprudence of Inebriety, pp. 129-131.

The habitual drunkard is a degradation from the casual, or from the neurotic inebriate. In daily drunkenness, the periodicity of the neurotic temperament has been overcome by modifications in the constitution caused by early alcoholic excesses. Heart disease, proliferation of the interstitial tissue, degenerations of nerve structure, paralysis of sensation and motion, a feeble intellect, a depraved morality, an unstable consciousness—combine to deprive habitual drunkenness of the *volitional* element that is essential to responsibility.

The hopeless condition of the alcoholic wreckage in habitual drunkenness is further illustrated by some recent researches of the Pathological Society of London. A portion of its report is as follows—the subjects being inebriates: 1. Transverse section of plantar nerve showed *degeneration and inflammatory changes.* 2. Longitudinal section of plantar nerve showed *increase of nuclei and infiltration of leucocytes.* 3. Longitudinal section of phrenic nerve showed *degeneration of nerve fibres, with segmentation of the myeline.* 4. Section of musculo-spiral nerve, with *well marked segmentation of myeline.* 5. Preparation of anterior tibial nerve showed *nerve fibres in various stages of degeneration.* 6. Transverse section of nerve showed *interstitial thickening of endoneurium.* 7. Section of muscle showed *increase of nuclei of sarcolemma, and infiltration of with leucocytes*—with much more of the same sort. Alcoholic changes of the liver and kidneys also were noted.

The claim that an habitual drunkard can *voluntarily* partake of alcohol, *knowing* also that it will take away his self-control, is placing upon him a weight of responsibility that he is ill able to bear.

There is a form of inebriety distinct from that of the casual, or the spasmodic, or the habitual drunkard. The *chronic inebriate* may be called the sum total of all drunkenness. In him are crystallized the disabilities, degenerations and disasters of alcoholic intemperance. Brief functional disorders have changed to structural diseases. The heart is permanently injured, the circulation permanently disturbed, the sensibilities permanently obscured. Reason is defective, morality is darkened, and the will is enfeebled, by the paralysis of alcohol, which, in the chronic inebriate, has become *fixed.*

Automatic and trance life characterize the chronic inebriate. One J. H., a lawyer, drank heavily for years, especially in the evening. By means of certain documents, and also through business transactions, he discovered that he was living a double life, concerning one part of which he had no conscious knowledge nor recollection. This both puzzled and frightened the gentleman—a person of very sensitive disposition—and for several years previous to his death he closely watched his own movements, lest he might, unaware, say or do some undesirable thing. Notwithstanding this, the man undoubtedly lived a trance, or automatic life during a great portion of his closing years.

The disposition of the chronic inebriate, when unclouded by the shadows of insanity, is such that he prefers solitude to the society of men. His friend and companion, the bottle, is more desirable in his eyes than the dram-shop; and hunting or fishing, remote from the presence of human kind, fill, perhaps, the measure of his ambition, and define the boundaries of his industry. The disabilities of the chronic inebriate are of such an extent and nature as to render him, in every part of his existence, an imbecile. He is incapable of rational judgment, or volition, or knowledge, or accountability.

ADENOID HYPERTROPHY AT THE VAULT OF THE PHARYNX; ITS PATHOLOGY AND TREATMENT.

Read before the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, at Newport, June, 1889.

BY D. BRYSON DELAVAN, M.D.,
OF NEW YORK.

Two satisfactory reasons exist why such a subject as the above should be presented: first, because it is possible that to some it may not be as familiar as its importance warrants, and, secondly, for the reason that the interchange of personal experience in matters relating to the practical management of a serious difficulty is never without value. I have taken the liberty, therefore, of bringing it before you and, in particular, of calling attention to some special points connected with it which are of great importance to the proper understanding and the successful management of one of the most annoying and pernicious conditions which we are called upon to treat.

Adenoid hypertrophy at the vault of the pharynx may be defined as a condition of chronic enlargement of the collection of lymphoid tissue at the vault or roof of the retro-nasal space, otherwise known as Luschka's tonsil.

The history of this affection may be very briefly stated. Although the presence of an unnatural enlargement in the upper part of the pharynx had been noticed, it is said, by Schneider, as early as 1655, it remained for the distinguished Prof. Wilhelm Meyer, of Copenhagen, to estimate it at its true value and to propose efficient means for its relief; and while many other authorities have described it since 1868, the date of Dr. Meyer's first article on the subject, that paper is classic and still remains one of the very best ever written.

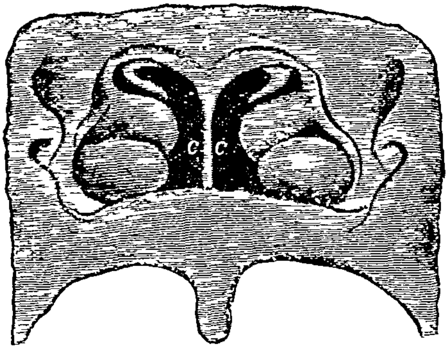


FIGURE 1

As to the pathology of hypertrophy of Luschka's tonsil it may be said, in general, that the gland is similar in structure to the other deposits of adenoid tissue which encircle the pharynx. In the diseased condition now under consideration it is susceptible of two classes of difficulty. The first of these is an acute or sub-acute inflammation, attended with temporary enlargement, the said enlargement subsiding with the disappearance of the exciting cause. While this cannot be called a true hypertrophy it is a lesion of great importance, both on account of the temporary inconvenience which it causes and, also, by reason of the tendency which it manifests to leave behind a permanent enlargement of greater or less degree.

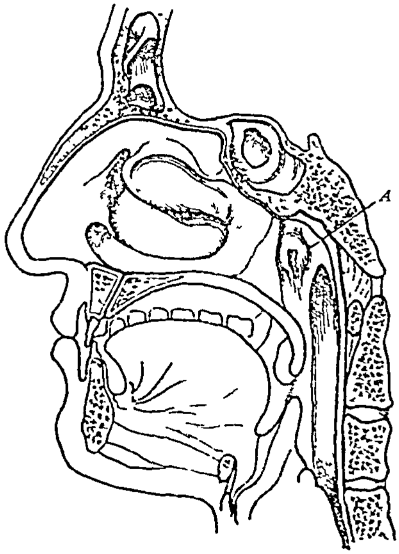


FIG 2 —Side view of the pharynx representing the same normal condition as fig 1 In natural respiration the mouth is closed and the current of air enters through the nose where it is first filtered warmed and furnished with moisture, and then passed directly downwards through the larynx and trachea into the lungs

This permanent or chronic enlargement in the course of time constitutes a true hypertrophy, and, although its actual degree may vary under the general influences which cause it to grow better or worse, it never entirely subsides. Chronic hypertrophy, as commonly met with, is itself of two varieties. In the first the adenoid element seems to predominate, while, externally, the surface of the enlargement is irregular, often simulating a true papilloma. The inconsistency of this variety is one of its chief characteristics, for it is soft to the touch, friable, easily broken up, and shows a tendency, when torn away, to separate in large spongy masses.

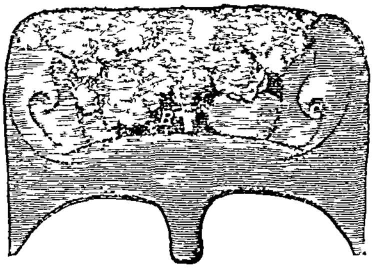


FIG 3 —The upper pharynx, showing a large adenoid growth *A* springing from the vault, filling the superior part of the pharynx, covering the tube leading to the ear *C*, and obstructing the entrance to the nose *B* —(*Lefferts*)

In the second variety the conditions are essentially different. The hypertrophied mass partakes more of the nature of a well-defined tumor, its base being tolerably small, its surface smooth, its consistence firm and its substance composed more largely of fibrous tissue element. Operation upon the latter variety is far more difficult

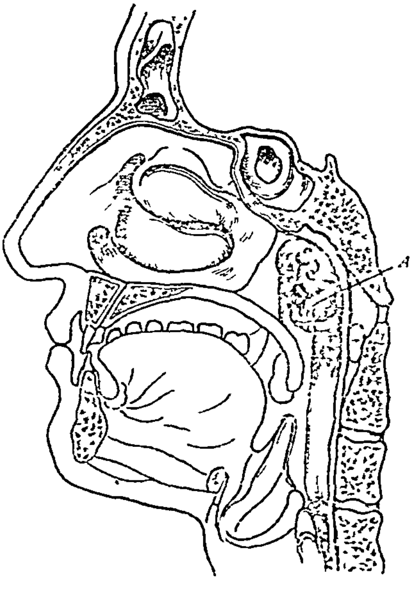


FIG 4 —Side view of number 2 showing obstruction *A* in upper part of pharynx Owing to this, the patient must breathe through the mouth

than the former, as its dense structure offers greater resistance to the efforts of the surgeon, which, when successful, result in the removal of but small masses of firm tissue, in marked contrast to the large fragments which are easily torn away in cases representing the variety first mentioned.

The location of the growth is of great practical importance, both as regards its effects and as to the comparative difficulty of its removal. Its size may be so great as to practically fill the retro-nasal space, or, on the other hand, the increase in its volume may be so slight as to make it difficult to determine whether or not its condition is pathological. It may be confined strictly to the vault, or it may be diffused over the posterior and lateral walls of the pharynx, or it may exist upon the posterior wall of the pharynx alone, in a large, well aggregated, tumor-like mass.

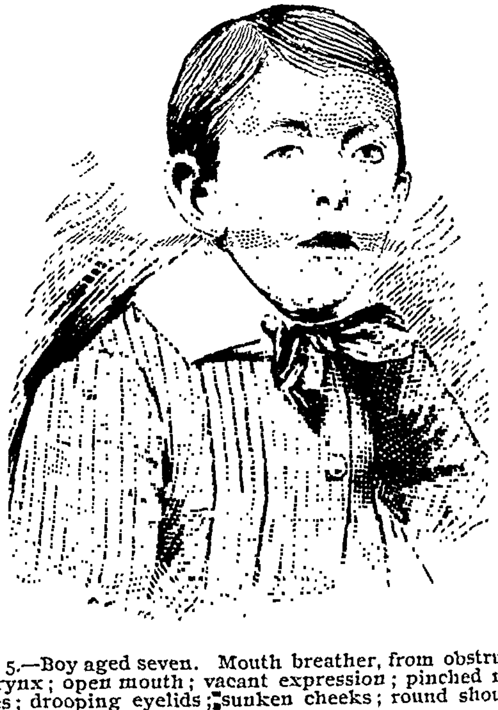


FIG. 5.—Boy aged seven. Mouth breather, from obstruction of the pharynx; open mouth; vacant expression; pinched nostrils; dull eyes; drooping eyelids; sunken cheeks; round shoulders.—(*Hooper*.)

The symptoms of adenoid hypertrophy at the vault of the pharynx are sufficiently well known to you, for there are few geographical regions in which the difficulty is not to be met with and many, on the other hand, in which it is an exceedingly common affair. It is unnecessary, therefore, to dwell upon this part of the subject further than to indicate the necessity for prompt interference in cases where the pharyngeal condition has existed from an early period in the patient's history. Indeed, many of its results are their own most eloquent witnesses. The stupid expression, anæmic surface, drooping eyelids, open mouth, projecting teeth, arched palate, pinched nostrils, and the deformed chest, on the one hand; and the mental dulness, loss of hearing, nasal obstruction, with all of the distressing symptoms of which it is the cause, the defective speech and constant catarrh on the other, are all sufficiently apparent to the most casual observer; while the reflex effects, as shown in the constant headache, irritative cough, laryngeal spasm and other neurotic symptoms, including in some exceptional cases such extreme results as chorea and, it is said, epilepsy, offer corroborative evidence to the more visible and tangible conditions already mentioned. Even in the infant it may be suspected, through the presence of mouth breathing, snoring, and a marked inability to perform the act of nursing.

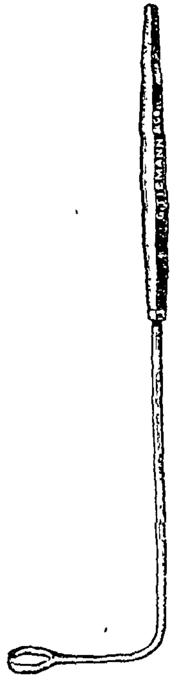
There is one effect of this obstruction to nasal respiration, however, which is not unworthy of consideration. I refer to the permanent deformity of the bony framework of the nose and hard palate, due primarily, as it appears, to atmospheric pressure. While with the angular upper jaw and high arched hard palate it is sometimes possible to find a normal nasal septum, the contrary condition is the rule.

Some of the worst exhibitions of septal deformity met with are associated with obstruction to free nasal respiration. The well known experiment of occluding one nostril in a growing rabbit has proved conclusively that marked asymmetry may result, and there is every reason to believe that similar causes in the young child may be followed by like deformities, and that too, at a very early period of the child's history. Zuckerkandl, whose observations have mainly been confined to the dead-house, goes contrary to common clinical experience when he makes the positive statement that deflection of the nasal septum never occurs before the seventh year. I am confident that deformity of the septum and of the other bony structures of the nose may arise early in life from obstruction to nasal respiration, due to adenoid hypertrophy in the retro-pharyngeal space and that in consequence, during the period of constructive activity, impeded nasal respiration is a constant menace to the healthy development of the osseous structures of the nose. Indeed, one of the most marked deflections of the nasal septum I have ever seen was in a boy three and a half years old. Nor is it the nose alone which thus suffers. The experiments above quoted prove that unless the air enter normally the sinuses adjacent to the nose, they too will be undeveloped and, in consequence, the whole conformation of the face may be materially changed.

Finally, as has been stated, nervous symptoms innumerable, both direct and reflex, must be recognized and their true origin traced, the general principle being conceded that the disease in question has extraordinary capabilities in producing them and that it is difficult or even useless to attempt to control them without removing their prime cause.

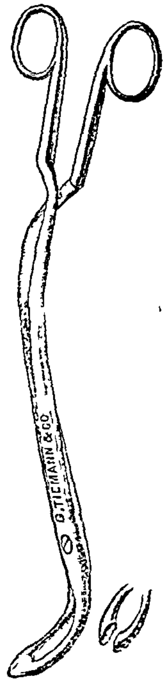
Considering these things it becomes highly important to secure the early recognition of the necessity for treatment in such cases, and to see that it is carried out promptly, efficiently, and to the best good of the patient. The treatment in these cases must depend in some degree upon the nature of the growth, the size to which it has attained, and upon the age of the patient.

In a few instances, where the disease is acute or sub-acute, where the tissue is soft, and where the growth is small, or finally, where the patient is old enough to submit to local treatment, the application of resorptives and the administration of alterative and tonic medicines, together with careful attention to hygiene, may accomplish a cure. Too often, however, these means will be found unsatisfactory, and the question of radical measures will present itself. Here, as in many other instances, surgery comes to the rescue, and where other resources have failed, we have in it the means of immediate, certain and radical cure. And first, as to the methods by which the offending tissue may be removed, two general classes of operation are employed. . The first of these is the destruction of the growth by means of caustic substances or the galvano-cautery, and the second, and by far the most popular, its forcible removal by means of some surgical instrument. With the first method we have seldom been able to attain as satisfactory results as with the second, although in certain exceptional cases, where the amount of tissue to be removed is small and its situation remote, it is both convenient and efficient.

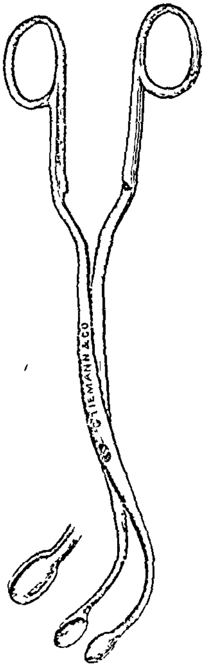


Ring Knife, or Curette.

By far the larger number of the more severe cases, however, will demand removal by cutting or tearing process. To meet the requirements of this many instruments have been devised, some of great practical utility, and others of little or no importance. These instruments may be divided into four classes: *a.* Those made upon the principle of the curette; *b.* the double curette or forceps; *c.* the wire loop, and finally, *d.* the adenomatome. The first class includes the ring-knife of Dr. Meyer and its modification, the sharpened finger nail of the operator, a most useful adjunct to the more complicated instruments, and the artificial finger nail, a metallic shield, made to be adjusted to the tip of the finger of the operator and having a sharp rounded edge corresponding to the finger nail; the second, the forceps of Loewenberg and its varieties; the third, an ingenious modification of the Jarvis snare, and finally the fourth, a double cutting instrument, furnished with scissors blades, called the adenomatome.



Loewenberg's Forceps.

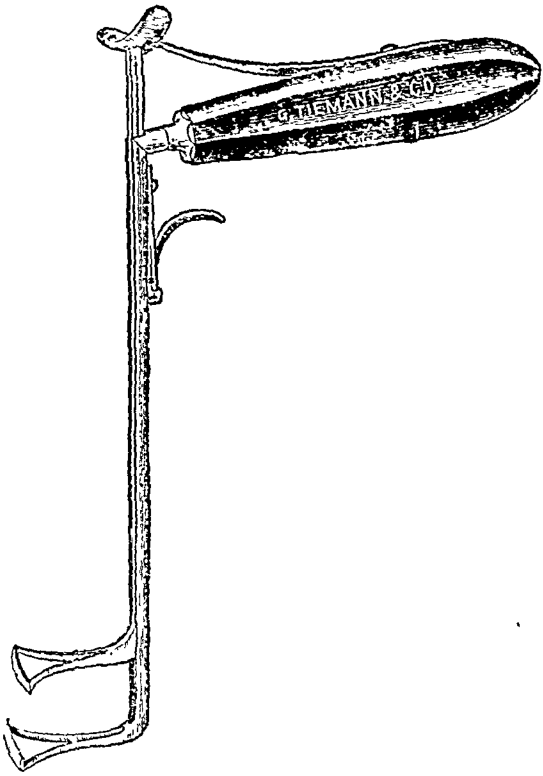


Loewenberg's Forceps. (Modified by Hooper.)

Of these instruments the one most generally useful in the hands of the writer is a modified Loewenberg forceps. With this, assisted by the finger nail of the operator, most cases may be satisfactorily reached.

The other instruments necessary for operating under anæsthesia are, a good mouth-gag, and a soft-palate retractor. The latter should be made with a shank broad enough to protect the uvula from injury during the process of operation.

The position of the patient during operation is of considerable importance. Two methods are in common practice. In the first held upon the lap of an assistant in the sitting posture, with the head upright and turned toward a good light. The head is steadied by a second assistant, who also manages the mouth-gag. The soft-palate may be drawn upwards and forwards by means of the palate-retractor, or it may be secured by tapes passed inwards through the nose and outwards through the mouth and the ends tied outside after Wales' method. With the head inclined forward in this position the blood caused by the operation will tend to escape from the mouth to the outer world, instead of being swallowed. Moreover, the pharynx can be well illuminated and the steps of the operation better directed by the aid of vision. The position upon the back is preferred by many good operators, requiring as it does, the services of fewer assistants and being the one to which a large majority of surgeons are better accustomed. It is not so favorable as regards the admission of light to the pharynx, and therefore, it requires a greater degree of skill on the part of the operator, whose tactile sense must be highly educated by way of substitute. Blood, instead of flowing out of the mouth, is swallowed into the stomach. This is not a decided disadvantage, for it trickles down from the posterior wall of the pharynx and escapes into the œsophagus, almost without making its presence felt, unless the flow excited has been considerable.



Major's Adenomatome.

A possible objection to the upright position is the additional risk of fragments of detached tissue falling into the larynx and thus causing asphyxia. Such an accident has been reported. It is not probable that it could occur under the use of the forceps, although by no means impossible with the ring-knife.

The management of a palate-retractor should be entrusted to a skilled assistant, as upon this the convenience, and, to some extent, the success of the operator will depend. Great care should be taken to place the retractor in such a position that the antero-posterior diameter of the entrance to the upper pharynx be made as wide as possible and that the most perfect protection be afforded to the uvula. Preliminary to operation the most thorough rhinoscopic examination possible should have been made and the situation, form, size and texture of the growth well studied. Where this is impossible examination by means of the finger is admissable, and digital exploration of the pharynx should always be made after the child has been anæsthetized and immediately prior to the operation. Should the growth be large and its attachments not easily demonstrated by the finger, a curved probe will lend useful aid in their mapping out. By the practice of careful preliminary examination, a fair idea of the amount of tissue to be removed may be gained and if, during the operation, the fragments removed be preserved, it will be easy to estimate what part of the growth has been withdrawn and how much of it still remains.

The removal of adenoid tissue from the pharynx is attended with more or less bleeding, and this, while generally of no importance, may sometimes be considerable. It is best, therefore, that the tissue be torn away, rather than cut. This method has the additional advantage of greater thoroughness, as masses of adenoid much larger than the fragment grasped by the instrument are frequently separated and, by this method, it is not likely that the healthy and more resisting parts will be injured. Remnants of adenoid tissue left behind by the forceps may be removed by the finger nail of the operator, by Hooper's modification of the Loewenberg forceps, or by means of a small carefully guided curette. Should the removal of a mass of adenoid be followed by undue bleeding it is well to defer further attempts at operation for a few moments, until the hæmorrhage shall have ceased, or, at least, until it shall have sufficiently diminished. Too great force in the separation of a fragment of tissue must be avoided. It is better to release the mass included in the grasp of the forceps and seize a smaller portion, or else, by applying them in a somewhat different position to separate adherent fragments, than it is to attempt to accomplish too much at once.

The manipulation of the instruments used in this operation as well as the *tactus eruditus* necessary to the clear understanding of what is being done are accomplishments which, of course, are best gained by practice and experience; it is safe to say that with the majority of operators, although satisfactory improvement may be secured after a limited number of cases have been studied, better and more certain results will be attained as the number of operations increases, and the skill of the operator is cultivated thereby.

In operating upon the upper pharynx anæsthesia is of the greatest possible value both to the physician and to the patient. The almost universal testimony, both from children and adults, is to the effect that the process of the removal of adenoid tissue from the pharyngeal vault is exceedingly painful. Exceptions to this are undoubtedly met with, and in the case of the strong and phlegmatic, and where the growth is soft, it may be well to dispense with a general anæsthetic in favor of cocaine. As a rule, however, patients who suffer from adenoid hypertrophy are not strong, nor are they phlegmatic. On the contrary, they are apt to be delicate, nervous and timorous, easily alarmed, susceptible of acute suffering, and, finally, likely to undergo a highly undesirable degree of depression as the direct result of operation. Not only is the comfort of the patient secured through anæsthesia, but the convenience of the operator is infinitely increased thereby, as may be readily proved by contrasting the difficulties in the way of successfully executing a delicate operation, requiring accuracy and care, upon a child whose struggles cannot be wholly restrained, even by the aid of strong assistants, with the same performance accomplished quietly and with deliberation. With general anæsthesia ample time is afforded for careful examination both before the commencement of the operation and during its progress and for the checking of undue bleeding should any occur; perfect control of the operation, as well as of the patient can be maintained; thorough relaxation of the throat can be secured; the inducement of retching, from pharyngeal irritation, that most active and persistent of reflexes, can be avoided; troublesome remnants of the growth can be recognized and removed; undue excitement can be prevented; and, finally, the whole work can be accomplished without pain and even without the slightest knowledge on the part of the patient of what has been done.

On the other hand, to grasp a highly sensitive child and hold him by main force; to display before him an array of surgical instruments; then to pry open his reluctant jaws; to plunge wildly into a remote and highly organized recess like the upper pharynx an instrument possibly too large to enter with ease; there to seize and remove "by a tearing and twisting process" large fragments of tissue with a sensation described by adult patients "as if the top of the head were being torn off;" to repeat this again and again at one sitting, the child meanwhile being half strangled with blood; or, worse still perhaps, to continue it at repeated sittings, is a process which cannot be too strongly deprecated, and which may naturally result in terrorizing the child, and in imparting a nervous shock, in itself by no means devoid of danger. It may be said, it is true, that the above seems overdrawn and that no one would think of operating in the manner described. Unfortunately, however, such operations have been and are done, and it is the wish of the writer to urge most strenuously against them.

As to the choice between ether and chloroform, aside from other considerations the latter has the special advantage of not exciting the abundant flow of viscid mucous from the pharynx which accompanies the administration of ether.

The care of the child after operation is a matter of considerable importance. Two varieties of treatment, one immediate, the other remote, must be carried out. As to the first, it must be remembered that, for perhaps several days after the operation, the patient is laboring under what may be called the surgical condition. During this time he should, if possible, be put to bed, and kept there until any abnormality of pulse and temperature have subsided and until any signs of nervous shock may have disappeared. Attention to this detail even at the cost of some inconvenience will be amply repaid. Meanwhile the administration of tonic doses of iron and quinine will materially hasten recovery. In other words, to this surgical condition the ordinary rules of surgical treatment should be applied.

Again, it must not be considered that with the performance of the operation the case is completed and all possible help to the patient afforded. The general condition should be made as perfect as possible, to which end change of air is often of great benefit, and, most important of all, the patient should be carefully examined in order to determine whether or not the operation has resulted in a thorough and complete success. Should the contrary prove to be the case, further treatment may be called for, and although when properly performed at first, it will seldom be necessary to repeat it, there is no reason why this should not be done when required. Indeed, it is well, in difficult cases, to mention to the parents beforehand the existence of such a possibility.

The pharyx being freed from the offending tissue, such conditions as catarrhal inflammation, relaxation of the uvula and the general tendency to local congestion can be greatly benefited by topical treatment, although it is pleasant to be able to record that in most instances special interference will be unnecessary.

The second variety of treatment relates to the cure of certain direct results of the naso-pharyngeal obstruction, namely, to mouth breathing, to errors of pronunciation and to deformities of the chest walls and of the framework of the nose.

When free nasal respiration has been actually established every possible encouragement should be held out to the patient to close the mouth and breathe through the nose, both while awake and asleep. Much help will be given if the jaw drop during sleep by affording it some artificial support. For this purpose a bandage of mull, tied under the chin and over the top of the head, this held in place by a second bandage tied around the forehead, the two being held together with safety pins at their intersection opposite the temples, as suggested by Dr. T. R. French will be found effective.

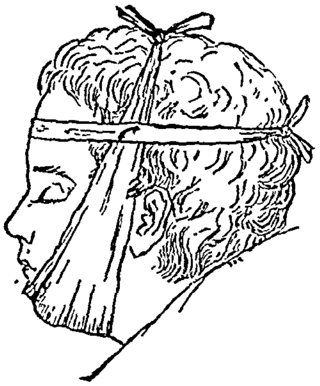


FIG. 6.—Method of bandaging the chin to prevent mouth breathing during sleep.—(*French.*)

The difficulty in pronouncing certain consonants is sometimes due partly to the relaxation of the soft palate common in these cases and it does not disappear immediately after the removal of the pharyngeal tumor. This condition should be remedied by appropriate local treatment, the patient meanwhile being trained by suitable vocal exercises.

Deformity of the chest, the so-called "pigeon chest," so commonly present in these cases, should be recognized, and physicial exercise appropriate for its eradication, be instituted. Nasal deformities too should be looked for and, if present, appropriately treated, although it is often astonishing, particularly in the case of the very young, how readily they will subside under the influence of the admission of fresh air and the restoration of the normal function of the organ.

In conclusion, it will appear that adenoid hypertrophy at the vault of the pharynx is a disease of common occurrence; that its presence is fraught with danger, particularly in children during the growing period; that the condition is easily recognized even by those not specially versed in the diagnosis of diseases of the throat; that it is absolutely remediable; and, finally, that by the use of skill and thoroughness in the performance of the necessary operation the most satisfactory results can be attained.

A CASE OF OLD FRACTURE OF THE PATELLA CURED BY WIRING THE FRAGMENTS.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889

BY W. C. WILE, A.M., M.D.,
OF DANBURY, CONN.
EX-VICE-PRESIDENT AMERICAN MEDICAL ASSOCIATION; PRESIDENT OF THE AMERICAN MEDICAL EDITORS' ASSOCIATION; MEMBER OF THE BRITISH MEDICAL SOCIETY; EDITOR OF THE NEW ENGLAND MEDICAL MONTHLY, ETC.

Of all the various fractures of bones of the human body, there is *none* which excites more uneasiness as to the result of the healing process, in the mind of the surgeon, than does a solution of the continuity of the patella. Various devices have been advocated for the purpose of keeping the fragments in apposition, in order to have the desire of the surgeon realized—union by bone, instead of cartilage; but none of these instruments have produced the results of which, taken collectively, we may as a profession be proud. To be sure, with the hooks of Malgaigne, better results have been obtained in later years than formerly, though the failures have been many and near together, while diseases of the fragments of bone may have been caused by their use.

To say the least, they are cruel. Next to the hooks, come in their order plaster of Paris, mole skin plaster, bandaging, etc.; *all* of which in our hands have proved unsatisfactory. To be sure, an occasional case will get well with fair results, from seemingly simple dressings, but these cases are exceptional and unusual. About twenty-five years ago the method of cutting down, and in the case of old ununited fractures freshening the edges of the fragments, and wiring them together with silver wire, came into vogue. For a time it fell into disuse, to be again revived by that famous surgeon, Sir Joseph Lister, the man to whom we owe our deepest debt of gratitude. One thing seems to be pretty well established, and that is, by this method a greater percentage of good recoveries have been reported, than by any other, and if done under strict antiseptic precautions, it is comparatively free from danger. The following case will illustrate the method and result:

John F. H., an American, 41 years old, of bad habits, on January 23, 1884, about 5 P.M., slipped on the ice at 148th St. and North Third Ave., New York City, and fell heavily to the sidewalk, striking his right knee. On attempting to rise he found he could not do so. An ambulance was called and he was taken to the Reception Hospital of Bellevue Hospital. At this place it was set, by means of, as he termed it, a surgical instrument and rubber plaster. He was kept there for two weeks and two days. On the Sunday evening previous, Prof. Frederick S. Dennis saw him. August 31, had him put in a plaster of Paris splint and transferred him to St. Vincent Hospital. Here the plaster of Paris splint was kept on for three days, when he was taken to the operating room and Prof. Dennis applied Malgaigne's hooks. This was done without ether but with considerable pain. These hooks were kept on for six weeks and were then taken out, but not without a great deal of pain during their removal by house surgeon Riley. He remained in the hospital two weeks more and then left with an ununited fracture, but still with the aid of a cane he was able to crawl around. In October, 1887, he was brought to me by Dr. G. H. Pierce, of this city. I found that the bone was fractured in three pieces, that there was only cartilaginous union, and that the gap between the fragments was about 2 inches. His trade was that of an awning maker, and at it he could not work at all. In fact, he was liable to fall at any time from the slightest rotation inward or outward of the foot. I advised an operation and he was removed to the Danbury Hospital, where, on November 26, in the presence of Dr. Robt. T. Morris, of New York, Drs. Watson and Pierce, of Danbury, Barber, of Bethel, and Todd, of Ridgefield, I did the following operation: Thoroughly washing the parts with soap and water, aided by a nail brush, and shaving, and then douching the limb with a solution of bichloride 1–1,000, I made an incision (an irrigating tube playing on the wound all the time, with a bichloride solution 1–1,000), in the median line over the patella. The incision was about 7 inches long and the skin and fascia were then dissected up. I found that the fragments were widely separated and connected only with moderately firm cartilaginous bands. These I dissected out, and with a cartilage knife, I cut away enough of the bone of each fragment to make a well roughened edge. By the aid of assistants I made holes in them and, drawing them together with double silver wire, I twisted them tightly. The coaptation was perfect.

After all the sutures were in position, the ends were twisted and hammered into the larger fragments, where they have remained to this day, causing no inconvenience whatever. The débris was all cleared out, bleeding stopped, the edges of the wound brought together with silkworm gut stitches, iodoform dusted on the external surfaces, a cotton pad placed over all and a roller applied. A straight board splint was applied to the posterior surface of limb, held in place simply with a roller. The patient rallied from the shock quickly, and for ten days did not have a pain or suffer the slightest inconvenience. On the thirteenth day I took off the posterior splint and put on a plaster of Paris dressing, but this caused so much pain that I had to remove it on the same day, replacing it with the old one taken off. The patient was kept in the recumbent position for eight weeks, when he was allowed to go about the ward. The wound healed throughout its entire extent by first intention. There was *no* inflammation of any character, and when he was discharged after three months there was firm union; the limb was as strong, he said, as ever. Here certainly was a man restored to usefulness by the wiring of the fragments when several other methods had failed.

THE MECHANICAL TREATMENT OF SYNOVITIS OF THE WRIST.

BY CHARLES F. STILLMAN, M.Sc., M.D.,
OF CHICAGO. (MEMBER OF THE AMERICAN ORTHOPÆDIC ASSOCIATION.)

In cases of a mild grade of inflammatory action, felt splints or immobile dressings may be used, but in those of a more serious character, when traction becomes necessary, it may readily be produced, and fixation of the joint increased and maintained by the use of two plain wooden splints extending from the base of the fingers to the elbow (see fig. 2). These are to be notched at each end and are not to be wider than the arm. They are to be placed one anteriorly and the other posteriorly, and are applied by means of adhesive plaster in the following manner:

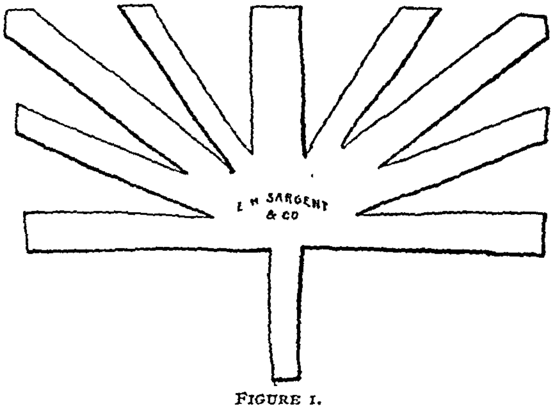


FIGURE 1.

Select plaster of the moleskin variety, and cut four pieces in fan shape shown in fig. 1. To the center of these attach, with needle and thread, strong webbing straps, each a trifle longer than the wooden splints, and to the free extremities of two of these straps, secure buckles of the same width. These four adhesive plaster fans are next to be interlaced, two above the joint and two below, and the ends are to be drawn over to the extremities of the splints, and buckled together as shown in fig. 2. It will readily be seen that the more tightly these are drawn, the greater the traction will be upon that part of the wrist between the interlacing adhesive plasters, and thus will be effected a true extension of the wrist itself.

These splints are to be secured by four or five transverse bands of adhesive plaster around the arm and hand (see fig. 2), and over all a roller bandage is to be neatly applied. This method of producing traction is simple, ready and effective for any of the joints, where more elaborate apparatus cannot be obtained. It is original with the writer and was first published by him about eight years ago. In many cases it will be found preferable for the surgeon to use a traction splint which will allow the hand to be fixed at any given angle with the arm, and fig. 3 represents such a brace devised by the writer. As will be seen by the engraving it permits fixation at any angle, and allows motion without interfering with the traction upon the wrist, and is applied in a manner similar to that of the wooden splint just described, but as it permits more control of the joint than the latter splint, it is to be be preferred when obtainable.

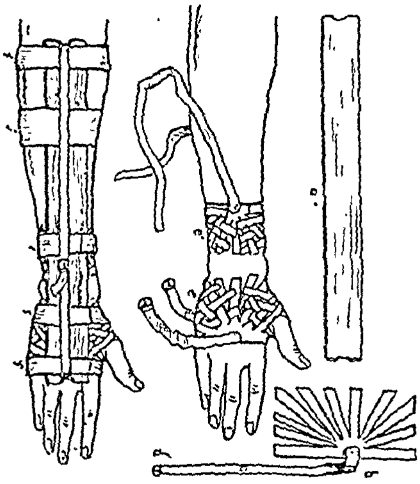


FIGURE 2.

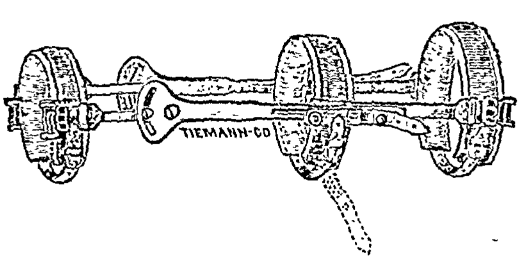


FIG. 3.—Stillman's Brace for Extension of the Wrist.

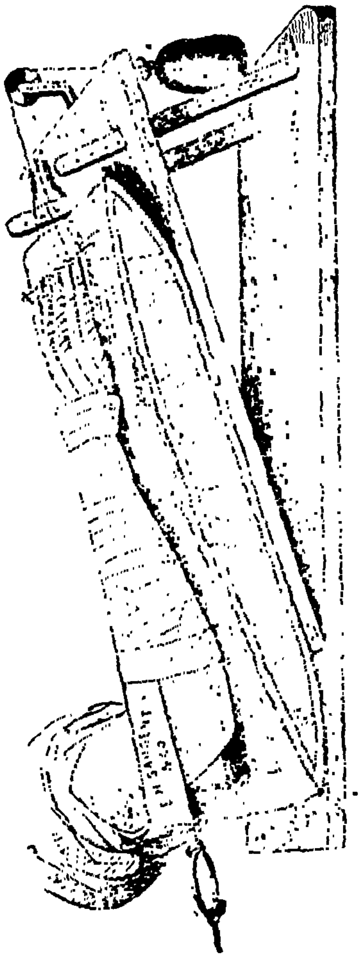


FIG. 4.—Esmarch's Apparatus for Wrist Extension.

When extension of the joint is desired—and yet a brace is objected to—Esmarch's traction apparatus may be employed. This is shown in fig. 4 and is applied in a manner corresponding to Buck's extension of the lower limb, the arm resting upon a pillow and inclined plane. But as this method of producing extension, necessarily implies confinement to the couch, it is open to objections, which the use of traction splints, even in severe cases, does not present.

The use of the various forms of apparatus just described renders the treatment of inflammatory and deformative conditions of the wrist an easy matter, and the results of all operations about the joint, are, by their use, rendered very much more certain.

125 State street, Chicago, Ill.

APPENDICITIS, WITH REPORT OF ONE CASE; ILLUSTRATED.

BY A. C. LAMOTHE RAMSAY, M.D.,
OF ST. CLOUD, MINN.

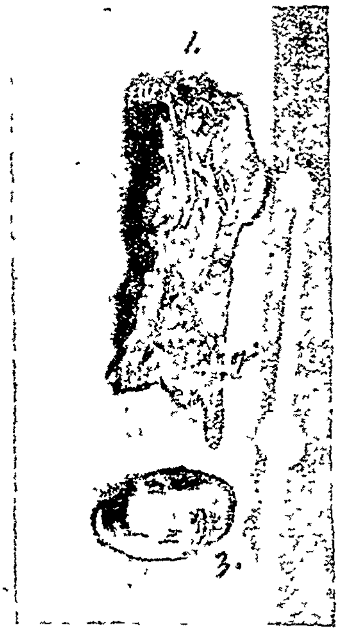
This case is a beautiful illustration of what Senn says in his masterly article on "Ulcerative Appendicitis" (in Vol. xiii, No. 18 of THE JOURNAL): "Many patients suffer from well-defined symptoms indicative of the presence of an inflammatory lesion of the appendix for months and years before it gives rise to a perityphlitis or perforative peritonitis."

Peter R., æt. 27, student, consulted me at my office December 14, for a vague recurring pain in the lower part of the abdomen of four years' duration. He attributed it to running one day, when he felt something give way in the ilio-cæcal region. He was a strong, muscular young man with a good family history, and besides those pains had never been sick. The pains had never caused vomiting except once, two years ago. His pulse was 82; temp. 37.7° C.

Examination revealed no tympanitis, no swelling in ileo-cæcal region, and only slight tenderness on deep pressure. Rectal examination revealed nothing abnormal. Urine normal. He never had suffered from constipation and very seldom from diarrhœa.

My diagnosis was appendicitis, and an early operation advised.

The next morning I was called to see him. There was more pain and very marked tenderness over the cæcal region. As he grew no better, he consented to the operative interference, and was admitted in my service in St Benedict's Hospital December 18, and prepared for the operation by thorough antisepsis.



Natural size 1, perforated extremity 2, ulcer 3, calculus

Operation December 19.—Ether anæsthesia. After removing the preparatory dressing of iodoform gauze the parts were washed with ether and the usual incision for ligation of the common iliac artery made. All bleeding points were carefully secured, and on getting down to the peritoneal cavity behind the cæcum, a small calculus, the size of a large bean, was found lying in a tablespoonful of fæcal-smelling pus. There was a well organized blood clot extending upwards on the muscles; this was carefully removed and gave rise to considerable hæmorrhage. The cavity was thoroughly cleansed and the peritoneum opened from behind. The appendix could be felt like a firm body slightly shorter than usual, it was adherent to the mesentery, the end was rough and presented the appearance of everted intestine. The appendix was brought out in the incision and ligated near the cæcum with a silk ligature, and the peritoneal surface sewed over after it had been disinfected. Then it was sewed in the peritoneum with continuous catgut suture. The specimen (Fig. 1) presented when opened one large, almost circular deep ulcer, with regular outline; at the extremity was a perforation which had destroyed the end. The lumen near the cæcum was very small, but the removed portion could easily admit an ordinary lead pencil.

The external wound was then closed over a glass drainage tube, with silk sutures to, but not including, the peritoneum, iodoform dusted over the incision, a piece of oiled silk over the same, and iodoform gauze and borated cotton over all completed the dressing.

The second day after the operation there was considerable oozing, the dressing was changed and the cavity washed out with a 1–40 carbolic solution. The pain left him after the operation and has not reappeared since. He went on to recovery, and two weeks after the operation could leave his bed feeling like a new man.

In concluding I would call attention to the small amount of pain in this case; the patient never having kept his bed only for a few days before the operation, and to the necessity of drainage in these cases.

MEDICAL PROGRESS.

THE INFLUENCE OF THE PREVAILING EPIDEMIC UPON TUBERCULOSIS.—DUJARDIN-BEAUMETZ calls attention to the fact that Grad formerly considered the influenza as a dangerous disease, more dangerous even than cholera. In view of the fact that the present epidemic has doubled or even trebled the general mortality, he believes that considerable importance should be attributed to this statement. He himself has observed a curious fact which he is quite unable to explain, viz.: that there are more than twice as many deaths among men as among women. Is it possible that this is because tuberculosis is more common among men than among women? He does not attempt to settle this question, but believes that the hypothesis finds support in facts noted by authors, especially at the present time, that the grippe is nearly always fatal to tubercular patients, the mortality among them having been considerably increased during this epidemic. The author also raises the question, "What is the subsequent history of the victims of the grippe from the point of view of tuberculosis?" Clark, in speaking of the epidemic of 1832, said that in many cases it was the point of departure for tuberculosis. Fournet made the same remark with regard to the epidemic of 1837. Brochin wrote that phthisis has often been known to develop under the influence of the grippe. Recent authors, among them Hérard, share these opinions. In view of the fact that we are convinced of the contagiousness of tuberculosis, seeing also that congestions are of frequent occurrence in the grippe, and considering finally the general enfeeblement produced by the disease, these ideas seem to be perfectly rational. The future will show in how far they are justifiable.

In this same connection M. Cadet de Gassicourt draws attention to the statement of Bertillon that influenza is much less infrequent and grave among children. May the point of departure of tuberculosis be looked for in this direction? We know that a considerable number of young children die of this disease; it would be of interest, therefore, in these fatal cases, to study the relative influences of heredity and the grippe.

TREATMENT OF EPILEPSY.—M. CORNET (*Jour. de Méd.*) reports the results of experimentation in the use of bromide of gold, bromide of camphor and picrotoxin in the treatment of epilepsy. The bromide of gold seems to exert some favorable action in certain cases, although its action is inferior to that of bromide of potassium. No physiological difficulty is experienced in administering 3 centigr. per diem. The remedy is eliminated by the kidneys and the bromine is found in the urine very soon after its ingestion; it disappears slowly. The gold accumulates in the system, its presence having been discovered in the liver; it does not appear in the urine until it has been administered for a long time.

The bromide of camphor, the action of which in epilepsy is still disputed, does certainly possess a favorable action upon the vertigo of epilepsy, which is lessened or even made to disappear. The bromide of camphor is eliminated in the urine, the bromine in the state of bromide of sodium and the camphor in the form of derivatives.

Picrotoxin produces a favorable effect upon the epileptic seizures in the dose of 1½ to 2 milligr. Experimentally it produces epileptiform convulsive attacks. Upon autopsy the toxicity of picrotoxin is witnessed in the hyperæmia of the organs; it is also found deposited in the liver.

BRYONIA ALBA AS A UTERINE HÆMOSTATIC.—PETRESCO (*Journ. de Méd.*) finds that the root of bryonia alba possesses hæmostatic properties analogous to those of ergotine and hamamelis. As employed by Petresco 25 to 30 grm. of the dried root are boiled in 300 grm. of water until the bulk is reduced to 150 grm.; the decoction is then filtered and edulcorated. This entire amount is given in three or four doses at intervals of half an hour. Urbenu, in analyzing the root, obtained several resinous principles and glucosides in alcoholic and aqueous extracts, the therapeutic activity of which varied in intensity according to the dose, but always gave effects identical with those which have been obtained from the root itself. The glucoside possessing the most powerful action has been termed by him *bréine*, from *bréi*, the popular name borne by the bryonia alba plant in Roumania. He has given the glucoside to rabbits in doses of 20 centigrm. in 1 grm. of water (one Pravaz syringeful), and in doses of 10 centigrm. to frogs. Doses of 1½ grm. are poisonous to rabbits, while 15 to 20 grm. are poisonous to frogs. Dogs and cats bear a dose of 1.40 grm. of bréine administered subcutaneously, very well. The author has also employed aqueous and alcoholic extracts of bryonia alba, giving them in pills, potions, etc., in the dose of 1 to 3 grm. a day. With the alcoholic extract especially, in doses of from 2 to 3 grm. a day, good results have been obtained in the treatment not only of metrorrhagia, but also in epistaxis and hæmoptysis.

PROPHYLAXIS OF TUBERCULOSIS.—In a recent discussion in the *Académie de Médecine*, M. GERMAIN SÉE recalled the fact that in 1782 a law was enacted by the King of Naples which compelled physicians to declare all cases of phthisis under penalty of a heavy fine or even banishment. The effect of the same law was to send poor patients with phthisis to the hospital, the director of which was obliged, under penalty of the galleys, to set apart all clothing belonging to such patients. He was also obliged to renovate the rooms of these patients, and burn the windows and doors and replace them with new ones. Penalties was also attached to the sale of the effects of phthisical patients. Every house in which a patient died was designated as infected and thus the proprietors were often reduced to poverty. These sanitary rules were merely copies of the regulations regarding the pest. A similar law was enacted in Portugal. As may readily be imagined the law was productive of endless misery while it remained without effect in the restriction of the disease. M. Sée believes that phthisis is conveyed entirely through the medium of the sputum, and that the prophylaxis of the disease consists merely in destroying the expectorated matters. The physician then should insist upon cleanliness which is the beginning and end of prophylaxis. It is wrong to sequestrate the patient. Instead of denouncing him to the authorities as was done in Naples, instead of depicting him to his family as a repulsive infectous object, instead of tracking him as a pestilential creature, instead of dooming him to perpetual quarantine and inflicting the pains of an anticipated death, the physician should remain silent regarding the nature of the malady and calm the patient's troubled mind, especially if he has been unfortunate enough to have read the popular instructions emanating from the "Congress of Tuberculosis."

M. Sée directs attention to the fact that phthisis has become a very prevalent disease in Algiers since its occupation by the French, whereas in former years the disease was almost unknown in that country.

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SATURDAY, MARCH 8, 1890.

UNITY THE SEQUENCE OF PROGRESS.

As surely as result must follow cause, so surely will present methods of investigation lead, and that in the immediate future, to a more rapid development of medical science. Never before in its history were so many men of ability and culture bending their energies to the verification of facts already stated and to the discovery of new truths. Rich fields were all the time awaiting investigation, but until now it was impossible to enter them. Hitherto men must needs content themselves with gross appearances, and speculate with reference to that which was beyond the limit of their comprehension. But by the added means of vision, which in itself is yet to be improved, these new and hitherto untrodden fields are brought within the range of study, and fresh discoveries of untold value are being added to our wealth of knowledge every day; and each new truth but helps the more to interpret what we knew in part, and comes to serve its special purpose in the healing art. What satisfaction arises from the thought that each new fact will surely harmonize with all that went before and be as surely in accord with other truths that are to follow, and that in the final outcome, when all are properly related, medicine will as surely and as justly as any other be numbered with the exact sciences. Each truth, itself imperishable, must harmonize with every other, until they blend, at last, in one complete and perfect whole. Thus shall our science be symmetrical in form and perfect in every member.

But let us consider again the means at hand for the accomplishment of this result. By reason of new helps our vision is enlarged until that which before was hidden in mystery becomes an open book. The structures of the tissues are all before us. Cell growth reveals itself in all its forms. The morbid changes to which the various structures are subject, and the diseases incident to these changes, become more and more apparent, until we come to understand that many of them are simply the expressions of such morbid changes. Now, as not before, we can attain to a clearer understanding of the germ theory and demonstrate the presence and the forms of disease-producing parasites.

Now, too, we may command from chemistry such service as was hitherto impossible, and from our studies in the laboratory and with the microscope can turn to the investigation of diseases with the confident anticipation of determining their alternate causes.

Truths thus discovered must command universal assent. The greater their number, the more surely will men come to see eye to eye, and the more must they harmonize in their views of medical science. With a common acceptance of facts, a more perfect unity in the profession must surely obtain. This final result is logically inevitable. The laws of chemical affinity are the same, whoever may study them. Those which govern in physiological development and in all morbid processes are, under similar circumstances, alike to all observers. They have one common language; they are unvarying in their expressions; they demand a common assent, and that common belief begets *unity*.

It is to be devoutly hoped that the days of mere theorizing are ended. As we survey the past it seems incredible that many of those theories should have taken such strong hold upon the public mind, and that they should have survived so long. Nor has their unwarranted extravagance seemed to militate against their power. This fact can hardly find more fitting illustration than in the admirable address with which the present number of THE JOURNAL opens. We commend its candid utterances to the attention of those who care to know more fully of the past history and present status of homœopathy, which name its devotees now propose to drop, while they re-christen the child of a hundred years "The New School."

May we not hope that in the immediate future better methods of instruction based upon the sure foundations of microscopical, chemical and clinical investigations will render the promulgation of such unbounded extravagances under the guise of medical teaching, to reasonable and reasoning students, impossible.

What we most need at the present hour, and what we shall need in the future, is the bestowment of the skilled labor of those who are able to interpret correctly the morbid changes that are constantly occurring in the progress of disease. We need to know more and more surely the nature of the causes which produce them. We have no further use for theories, but we have abundant use for facts. And for the accumulation of medical truths, the times were never so propitious. Every active man in every local society is dealing with them; the State societies and our National organization are pursuing similar lines of investigation; and the International Congress only gives a still broader expression of a common purpose. In its power to disseminate medical truths, above and beyond all other agencies stands the medical press. Our exchanges are in all languages, and they come from all lands, but when they speak of what they know—not of what they think—their utterances are in harmony and command a common belief. Let then the labors of our younger men be directed along the same lines of original investigation, and the recorded experiences of older men set forth the simple facts as they are carefully observed in the progress of disease, and when, as often times we must, we still rely upon empiricism in our treatment, let us be alert to discover the reason, if possible, which governs in its use. As far as possible the teachings in our medical colleges should be verified by demonstrations. These must and will command belief. Such teaching alone will hasten the progress of medicine. Such knowledge, and such acceptance of truths imparted will beget such unity in belief and such accord in practice as can be attained in no other way.

Unity in the medical profession must and will follow, as the logical sequence of correct medical teaching.

TYPHUS FEVER IMPORTED FROM ANTWERP.

Before the days of oceanic steam transit typhus fever was much better known in this country than at present. As ship-fever, commonly brought over in sailing vessels from Ireland or England, it was too well known at our seaport towns twenty years and more ago, and many were the young medical men who lost their lives at the fever-hospitals, through attendance upon typhus immigrants and others whom these had infected. The very general adoption of steam vessels for the immigrant service has been a factor in reducing the importation of this once dreaded disease. There have not been a sufficient number of cases in our hospitals to give clinicians an opportunity to illustrate the differential diagnosis of the continued fevers. There are doubless thousands among our younger generation of medical graduates who have never been brought face to face with typhus fever, either in their student life or later. To use an every-day expression typhus is a "back number," along with old-fashioned scurvy and the still more ancient jail-fever, and so it will remain, let us hope, through the efficiency of sanitary measures on both sides of the Atlantic. But there is now in this country, a small number of these fever cases, originally brought hither from the ports of northern Europe, from Antwerp chiefly; and there are some cases that have been begotten in New York from the persons or baggage of those former cases. Two steamers from Antwerp have done the bulk of the importations, beginning their work in December last. The New York City Board of Health has given notice that the nine cases known to have occurred in that city since December 24, have with two exceptions been traced to an infection derived from certain lodging-houses in Antwerp: and a caution is at the same time given to physicians to be on their guard as to the possible springing up of cases in the houses where immigrants have lodged. The question of laxity and shortcoming at quarantine, for not preventing the introduction of this infectious disease, has been raised, but there appears to be no disposition to fasten any great measure of blame upon that office, since the incubation period of the disease may be so long that it is possible that an immigrant may have been infected on the other side of the ocean, and yet not be taken down with the fever until after his arrival in some American port. With regard to the dispersion of possibly infected typhus immigrants throughout the country, along the lines of our railways, it may be well to utter a word of caution to our readers who chance to run across an exceptional variety of fever, especially in the person of a newly arrived alien from northern Europe; our modern facilities for rapid transportation may possibly be the vehicle of typhus to inland towns that never saw it before. One of the worst features of the case seems to be in an apparent sanitary neglect on the part of those officials on the other side of the ocean, who have allowed the fever-nests to exist so long among their immigrant lodging-houses, although due warning has been sent to them from this side. The possible typhus-infection of a steam-vessel, used for immigrants, is another question the answer to which may be evolved by the present episode; the suspicious fact being that two or more successive trips of the same vessel have been the channel for the introduction of the same kind of infection.

EDITORIAL NOTES.

HOME.

QUARANTINE AGAINST EPIDEMIC INFUENZA IN SARANAC VILLAGE.—Dr. E. L. Trudeau writes to the *Medical News* that he has been enabled to carry out, with apparent success, a policy of protective non-intercourse against "la grippe" at his Cottage Sanitarium in the Adirondacks. Fearing that an incursion of influenza would prove disastrous to the invalids under his care at that institution, he undertook the experiment of a quarantining of the place, so soon as the disease appeared in that neighborhood. Since that time, a considerable portion of the population of the surrounding country have been attacked, but no case had occurred among those connected with the sanitarium itself, so late as February 8. That establishment is not more than a mile distant from the village, where has been a number of cases of the epidemic disease.

THE ALVARENGA PRIZE.—A medical prize fund, known as the Alvarenga Prize, is in the custody of the Philadelphia College of Physicians, and an award will be made this year, amounting to one year's income from the bequest. The prize will be given to the author of the best unpublished memoir in any department of medicine. The competition must close June 1, 1890, before which date essays may be addressed to Dr. Isaac Norris, Jr., Secretary of the College. The right to reject any or all of the proffered essays, that may be unsuitable, is reserved by the committee on award.

A PASTEUR INSTITUTE IN NEW YORK.—The *New York Medical Journal* announces that Dr. Paul Gibier, formerly of Paris, has opened a laboratory in New York City for the preventive inoculation of rabies, according to the methods of M. Pasteur. Dr. Van Schaick will be Dr. Gibier's assistant and Dr. Liautard will be consulting veterinarian.

SPECIAL NOTICE.—The next meeting of the Fifth District Branch of the New York State Medical Association will be the Sixth Annual Meeting, to be held in Brooklyn on Tuesday, May 27, 1890. All Fellows desiring to read papers will please notify the Secretary, E. H. Squibb, M.D., P. O. Box 94, Brooklyn.

FOREIGN.

THE BRITISH MEDICAL ASSOCIATION.—The fifty-eighth annual convention of the British Medical Association will be held at Birmingham, during the last week in August, under the Presidency of Dr. Willoughby F. Wade, senior physician to the General Hospital of that city. The Town Hall, Queen's College, and Mason College have been secured for the purposes of the sessions. The local committee on entertainment have their plans already laid for numerous excursions, and the customary evening receptions and amusements for the members.

THE BERLIN CONGRESS.—Dr. William Goodell, of Philadelphia has been invited by the Gynæcological Section of the Tenth International Medical Congress, which is to be held in Berlin during August of this year, to open the discussion on the Induction of Premature Labor by a paper on that subject.

GERMAN UNIVERSITIES.—The total number of matriculated students in the twenty-one German universities in the current semester is 29,007 as against 29,491 last summer session. Berlin stands first with 5,731 students, Munich second with 3,479, Liepzig third with 3,453, Halle fourth with 1,657, Rostock stands last with 346 students. The medical faculties have the largest attendance, the total number of students in them this winter being, 8,714.

TOPICS OF THE WEEK.

THE HYDERABAD CHLOROFORM COMMISSION.

The second Hyderabad Chloroform Commission has ended its labors, and our contemporary, the *Lancet*, in its issue of the 18th of January, gives a summary of the work done and of the conclusions arrived at. As in the case of the former Commission, Surgeon-Major Lowrie presided; but the important fact in the present Commission was the presence of a representative of the *Lancet*, Dr. T. Lauder Brunton. The experiments were conducted with the utmost care, and every precaution that scientific knowledge and familiarity with the details of vivisection could devise were adopted to insure freedom from error either in the performance of the experiment or the conclusions drawn from it. The liberality of his Highness the Nizam of Hyderabad had secured all the necessary scientific apparatus and accommodation, so that the labors of the investigators of the merits or demerits of chloroform were facilitated in every way.

The history of the great work just completed is of more than passing interest. All practical surgeons know that for some ten or twenty years past the London schoolmen and their brethren in the New England States of North America have been not only warmly advocating the use of ether as the best general anæsthetic, but they have denounced with energy the use of chloroform. Amongst the most influential and able of the partisans of ether was the *Lancet*, which was unsparing in its denunciation of chloroform, and its influence with the profession was so great that surgeons using chloroform as their routine anæsthetic did so at considerable personal risk. Chloroform was on the defensive, and everything seemingly offered an easy victory for the advocates of ether when, in 1887, Dr. Reeve, of Dayton, U.S.A., in a contribution to the *Medical News*, asserted that the inhalation of ether "in the human subject may cause death as suddenly, as unexpectedly, and in the identical manner that chloroform does." To openly publish such an heretical opinion in the New England States required more than the average amount of moral courage, and, as might be expected, the opinion was promptly denounced. Dr. Packard, of Philadelphia, said that sudden deaths under ether almost invariably occurred in patients who were previously enfeebled by age, loss of blood, by exhausting disease, or by the results of injury which had already weakened their hold upon life; while in a large proportion of the cases of sudden death under chloroform it occurred in healthy subjects, without loss of blood or dangerous lesion. The war of words recommenced, and the "etherists" were further aggravated by a very valuable paper by Dr. Stroud, which appeared in *Daniel's Texas Medical Journal*, drawing attention to the beneficial effects of chloroform inhalation in cerebro-spinal meningitis.

A special meeting was held in the New York Academy of Medicine to consider the relative merits of the different anæsthetics, and Dr. Gerster tried to reconcile the etherists and chloroformists by pointing out that, in their proper spheres, they were both useful; but the opponents were not to be reconciled, and the etherists, on the declaration of Dr. Knapp, of New York, of his conversion to the use of ether, were generally considered to have secured a victory. Southern American surgeons now felt called upon to state the grounds for their preference for chloroform, and in October, 1887, Dr. Hunter M'Guire, of Richmond, Va., read a paper, "The Choice of General Anæsthetics," before the Medical Society of Virginia, in which he gave an account of his great experience with chloroform whilst Medical Director of the famous "Stonewall" Jackson Corps, Army of Northern Virginia, C.S.A. His enormous total of 28,000 consecutively successful chloroformizations could not be either ascribed to chance or ignored; neither could it be asserted that a drug was inherently dangerous which could be freely administered without a death to 28,000 consecutive patients, very many of whom, as was the case with their great leader, had, prior to inhalation, suffered enormous loss of blood, and the great majority of whom had suffered privations and hardships, and undergone fatigues that have made their corps immortal. In the same year Dr. Julian J. Chisolm read before the Baltimore Academy of Medicine his papers, "Chloroform, the Best of Anæsthetics," and "A Very Valuable Lesson for Those Who Use Anæsthetics"—papers telling of his 10,000 successful administrations of chloroform as both a military and a civil surgeon.

At home the question was very pronouncedly brought before the profession and the public by a philippic in the *Lancet* of September 15, 1888, against the use of chloroform, in which, commenting on the death of six patients whilst under chloroform anæsthesia, our contemporary hysterically demanded—"Was there any reason why ether could not have been used instead of chloroform?" In the following issue the journal contained a letter from Mr. Foy, whose series of articles on "Anæsthetics" were then commenced in our pages, in which he protested against the tone of the *Lancet's* leader, and argued that it was not the part of a scientific paper to raise a popular outcry against a valuable medicinal agent—one which he considered to be the best anæsthetic we possess. He stated that the greater number of deaths under chloroform narcosis were due to faulty administration, and therefore avoidable. The letter called forth a reply, and produced a considerable amount of correspondence. The very positive assertions of the *Lancet* on the danger of chloroform finally brought a letter from Surgeon-Major Lawrie, stating that he had had 50,000 chloroformizations done under his charge without the loss of a single life, and the very important announcement that his Highness the Nizam of Hyderabad had authorized him to place £1,000 at the disposal of the *Lancet* for the purpose of defraying the expenses of a representative from that journal to examine, with the scientific experts of Hyderabad, the properties of chloroform as an anæsthetic. Dr. Lauder Brunton was selected, and the Commission is over. The experiments were such as should satisfy the most exacting. To quote the *Lancet:* "The experiments were of two kinds; those of one group being made without recording apparatus, and being intended to ascertain what influence is exerted by various conditions upon the relation between the stoppage of heart and of respiration, and the limits within which artificial respiration and other means of resuscitation are useful.

"The second group consisted of experiments with recording apparatus, and were made for the purpose of ascertaining the effect of various conditions upon the heart and blood pressure." Chloroform was given in all sorts of ways, with the invariable result that the respiration stopped before the heart. The Commission drew up fourteen practical conclusions, which may be summarized as follows: The recumbent position on the back and absolute freedom of respiration are essential. Tight clothing of every kind should be avoided. An apparatus is not essential. A convenient form of inhaler is an open cone, or cup, with a little absorbent cotton inside at the apex. At the commencement of the inhalation care should be taken, by not holding the cup too close over the mouth and nose, to avoid exciting, struggling, or holding the breath. As a rule, no operation should be commenced until the patient is fully under the influence of the anæsthetic. The administrator should be guided as to the effect entirely by the respiration. If breathing becomes embarrassed, the lower jaw should be pulled or pushed from behind the angles forward. Alcohol may be given with advantage before operations under chloroform, provided it does not cause excitement, and merely has the effect of giving a patient confidence and steadying the circulation. Suspended respiration is to be treated by artificial respiration and lowering the head. They add that "the Commission has no doubt whatever that, if the above rules be followed, chloroform may be given in any case requiring an operation with perfect ease and absolute safety, so as to do good without the risk of evil."

It is very gratifying to us to see such a clear and unequivocal confirmation of the views on the safety and value of chloroform so recently put forward in this journal by Mr. Foy; and we would particularly draw our readers' attention to the practical identity of the rules drawn up for the administration of chloroform by Mr. Foy and by the Commission. There is occasion neither for addition to the rules as they appear in "Anæsthesia, Ancient and Modern," nor for alteration in them. When Mr. Foy's views on chloroform were published, ether was the favorite anæsthetic; and in formulating rules for the administration of an unpopular drug, the author of "Anæsthetics" had much professional prejudice to contend against. Now that the most carefully conducted series of experiments that have, perhaps, ever been made in practical therapeutics so fully confirm the correctness of his opinion; we have little doubt that his book will become the most popular monograph on anæsthetics with both students and practitioners.—*Dublin Journal Med. Sciences.*

TOO MANY LECTURES.

We have adverted before to the growing custom among our most advanced schools of medicine of substituting for the large number of didactic lectures formerly given, practical work of various kinds. The time will come when laboratory work will be first, and lectures merely supplementary, instead of *vice versa*, as at present. Many years ago, when physicians had from one to five students under them, the instruction was almost wholly practical—crude 'tis true, yet practical. Then, with the multiplication of schools, the pendulum swung to the other extreme; but now it would seem that the tendency is towards the "golden mean."

Canada is also waking to the necessity of less lectures, and several of its schools have already made radical changes in the curriculum. The faculty of McGill University, however, though desiring to modify its curriculum by substituting practical work for many of the lectures now given, is handicapped by the Ontario Medical Council, which refuses to permit of any changes.

Dr. MacDonnell, in the opening address this Fall, says to the students: "The excessive time devoted to didactic lectures is the worst feature in our Canadian system of medical education. There is no country in the world where so many lectures have to be attended. When your brain is weary with much listening, your fingers cramped with note taking, your ischial tuberosities worn away from much sitting, do not entertain hard feelings against the Faculty, but remember the provincial boards." *Times and Register.*

THE FATE OF PATHOGENIC MICRO-ORGANISMS IN DEAD BODIES.

Dr. E. v. Esmarch (*Zeitschrift f. Hygiene*, Bd. 7, Heft 1) finds that there is a comparatively rapid disappearance of the pathogenic microörganisms from the dead bodies of animals who have died of bacterial diseases. His experiments also show, where the dead bodies are placed in water or buried, that the water or earth surrounding them does not become infected. In the case of anthrax, substantiating the observations of Feser, he finds that the bacilli die out very rapidly from the dead bodies of the host.

That this disappearance is not due alone to the crowding out of the pathogenic bacteria, by the microörganisms of putrefaction, is shown by preserving tissues, containing pathogenic bacteria from dead animals, antiseptically. In this case the pathogenic organisms disappear; but it is true they remain present longer than where they are made to contend with the putrefactive bacteria.

E.'s conclusions, in accord with nearly all German observations, are that the proximity of cemeteries, and the drainage and ground water from the same, have no effect upon the spread of epidemic disease.—*Medical News.*

TRANSPLANTING TUBERCULOSIS.

The State Board of Health of California has been greatly exercised over the danger to which it believed the State is exposed through the immigration of a large number of persons suffering from tuberculosis. It even suggested, in a recent bulletin, the advisability of establishing a strict quarantine against consumptives until measures of isolation and disinfection could be undertaken. The daily press of San Francisco has not been slow to take up the question, and the result has been a scare and sensation of such magnitude that even the proposed prize-fight has been for the moment forgotten.—*Medical Record.*

PRACTICAL NOTES.

AMENORRHŒA CURED BY FRIGHT.

Dr. E. T. Collins reports in the *British Medical Journal* the following case of re-established catamenia, resulting from a profound mental impression, namely, fright by a tramp: A healthy, robust girl, unmarried, aged 35 years, suddenly ceased to menstruate, two and a half years ago, without apparent cause. No suspicion or indication of pregnancy was present. She did not complain of any subjective symptoms, except monthly, when slight headache, backache, and malaise were felt for a few days. Medical treatment gave no results. Last June, returning in the evening from a country walk, she was suddenly alarmed by a tramp on the roadside. The catamenia commenced that evening, and has continued normal at the last three periods.

CODEINE IN OVARIAN PAIN.

Dr. Freund, of Strassburg, has recently used codeine in a large number of cases of abdominal pain from various causes, with the view of testing the assertions of Dr. Brunton that the drug is of especial use in intestinal or pelvic pain. His results seem to indicate that Brunton's views are somewhat exaggerated.

Pain from acute uterine affections, such as dysmenorrhœa, Freund found, was not as quickly relieved with codeine as with morphine, and the relief was of shorter duration. In pain from pelvic exudates and tubal disease the drug was also of but little value. In ovarian pain, however, whether from prolapse, oöphoritis, perioöphoritis, or neuralgia, the relief afforded by codeine was prompt, unmistakable, and more or less permanent even when small doses were given. The amount usually administered was about half a grain three times daily in pill form, and in but few cases was it necessary to increase this quantity. His experience coincides with Brunton's that no disagreeable or harmful effects follow the use of the drug. It does not stupefy, diminish the appetite, nor constipate. He prescribes the pill for one month after an attack of ovarian pain, and warmly recommends the drug for the above conditions.- *Therapeutische Monatshefte*, November, 1889.—*Medical News*.

GERMICIDES.

A series of experiments have been carried out with a view of ascertaining the smallest quantity of any antiseptic substance which is capable of preventing the development of the bacillus of typhoid, cholera, and tuberculosis. The culture of the typhoid bacillus was prevented by 1 part of corrosive sublimate on 20,000 parts culture medium, one part of sulphate of quinine on 800 of culture medium, 1 part of carbolic acid on 200, 1 part of hydro-chloric acid on 105 parts of chloride of lime on 100 parts of culture medium. The cholera bacillus (coma bacillus of Koch) will not develop in an acid medium. One drop of a one-per-cent. solution of hydrochloric acid prevents it. Its development is also prevented by 1 part of corrosive sublimate on 100,000 parts of culture medium; 1 part of sulphate of quinine on 5,000 parts, 1 part of sulphate of copper on 500 parts, and one part of carbolic acid on 400 parts of the culture medium. Many substances such as salol, ether, chloroform, fluoride of sodium, iodoform, etc., hinder remarkably the culture of the bacillus of tuberculosis, but those which sterilize the culture medium of this bacillus completely are hydrofluo-silicic acid, ammonia, fluo-silicate of iron, fluo-silicate of potash, polysulphide of potassium, and silicate of soda.—*American Prac. and News.*

THE TREATMENT OF NÆVUS BY COLLODION.

At a recent meeting of the Midland Medical Society of England, Mr. Thomas showed three cases of nævi treated by the application of collodion—one in the back, another in the parotid region, and a third over the anterior fontanelle in a young infant. Collodion was painted over them and the skin in the vicinity, the application being usually carried out by the mother. In all considerable improvement had resulted, rendering further treatment by operation unnecessary. He pointed out the absolute freedom from risk or danger, and the advantages it offered in some situations where almost all methods were unsafe.—*Birmingham Medical Review.—Medical News.*

PRECAUTIONS TO BE OBSERVED IN PERCUSSION.

Probably many good ausculators exist for one good percussor. The note obtained in percussion is often very complex and difficult of analysis, the more difficult being of short duration. Pitch and quality are hard to separate. Moreover, percussion is usually badly taught by instructors. Not to weary you with the well-known advice regarding the mode of striking a quick blow, I wish to call attention once more to the great need of comparing the results of lighter and heavier blows, and also of examining the patient standing, and with the body naked when possible. I wish also to emphasize the value of the much-neglected study of the sensation conveyed to the finger used as the pleximeter. By this finger the sensation of resistance will often give a better idea of the level of fluid than the ear. In children's chests the sensation is of especial value, since their elastic chests often give notes from both sides. It is, moreover, remarkable what slight differences of pitch and quality may thus be appreciated.—J. W. Roosvelt, M.D., in *Medical Record.*

SOCIETY PROCEEDINGS.

New York County Medical Association.

Stated Meeting, February 17, 1890,

THE PRESIDENT, GEORGE T. HARRISON, M.D., IN THE CHAIR.

PRESIDENT'S ADDRESS.

Dr. Harrison, Vice-President, on assuming the position made vacant by the death of Dr. Charles S. Wood, made an address, which was in part as follows:

Charles S. Wood is no more, and in his death this Association has received an irreparable loss. But a month has passed since your suffrages called him to this presidential chair for a second time. Few of you who then saw him imagined that they should never behold his noble and serene countenance again. He was urged by those bound to him by the closest ties of love and affection not to go to that meeting, as he was visibly failing in health and symptoms of a threatening character had manifested themselves. But such was his devotion to the interests of this association that he felt that he must be present, cost what it would of personal sacrifice.

With fond anticipations he looked forward to this occasion, when in his address he would tell you in eloquent terms what this association had accomplished in the last twelve months, and in burning words would unfold his hopes and aspirations for its future welfare. But it was not to be; his work on earth was done. The language which Carlisle applies to his father is singularly appropriate here. "As for the departed," he remarks, "we ought to say that he was taken home 'like a shock of corn fully ripe.' He had finished the work that was given him to do, and finished it (very greatly more than the most) as became a man. He was summoned, too, before he had ceased to be interesting—to be lovable." . . . .

If we follow his career from boyhood to its closing scenes it will be found that he discharged the duties of life with rare fidelity. Whether we consider him as scholar, teacher, surgeon in the field in war-time, or in the "piping times of peace," as active practitioner or presiding officer of a scientific body, alike in all circumstances, he was industrious, faithful and upright. Dr. Wood had an eminently judicial mind, and this, with his extensive knowledge of parliamentary law, rendered him remarkably well qualified for the duties of a presiding officer. He was singularly free from all affectation, and had a healthy, well-balanced mind. He was very decided in his convictions and expressed his opinions fearlessly, but there was no bitterness in his judgments. With special predilection he devoted himself to the study of surgery, physiology and medical jurisprudence. . . . . He was a man of modesty and true dignity. Above all, religion was his pole-star, and kept him true in all the distractions and vicissitudes of life. "*Extinctus amabitus idem.*"

A retrospective glance at the work done by our association during the past year affords abundant proof of gratifying progress. In this time we have added 183 new members, making our roll number 480 names at the end of the year. A number of excellent papers have been read before the association, and the discussion upon them, as a rule, has been marked by thoroughness and earnestness. The large attendance upon the meetings fully attests the interest of the Fellows. The report of the Treasurer, too, furnishes tangible proof in another way of the continued interest of the Fellows in the success of our organization. Let not this success be an inducement to supineness, but, on the other hand, let it be an incitement to put forth greater effort to increase the power and usefulness of this association.

THE DEATH OF DR. WOOD.

The following resolutions were adopted:

Resolved, That by the death of our President, Dr. C. S. Wood, our association has been deprived of one of its earliest and most valued members—one whose constant presence rendered its labors more efficient and whose counsel warned against many dangers.

Resolved, That his industry and zeal were always an example to us, his contributions to the work of the association of a high order, and, further, that his deportment dignified its objects.

Resolved, That in tendering our condolences to his family we trust that their grief may be tempered with the remembrance of his many excellent traits and abundant virtues.

THE LATE DR. LEWIS HALL SAYRE.

The following minute was also adopted:

The sadly sudden death of Dr. Lewis Hall Sayre enrolls another name in the memorable list of those who have nobly laid down their lives in devotion to the duties of our profession.

In the very flower of early manhood the brilliantly promising career opening before him is closed in this world by an act of self-sacrifice as heroic as aught that history tells of warlike prowess. The call to relieve another's suffering found him regardless of his own, and, thinking only of the good deed to be done, he perished in its unselfish doing.

No greater meed of praise can earthly chronicle record than that a man so honored his high office as to give his life for it, no better assurance of the heavenly welcome to a good and faithful servant.

This Association, to the expression of its own grief at the loss of an associate whose qualities of heart and mind commanded affection and respect, desires to add its profound sympathy with those who are bereaved of the son, brother and husband in whom their loss and pride were justly centered.

INTERESTING SURGICAL CASES.

Dr. T. H. **MANLEY** presented two patients upon whom he had recently operated. The first was an infant, six months old, who had had an undescended testis. He opened the canal and brought down and secured the testicle, and the result had been very satisfactory. This was the second case of the kind, he said, in which he had operated. The second patient was a young man who had been injured in the head by the accidental discharge of a parlor rifle. The ball had entered near the left superciliary ridge, and an incision was made at this point. The ball, which was found just over the sphenoid fissure, was extracted, and it was ascertained that the orbital plate of the frontal bone was shattered. Four or five fragments of bone were removed, but the eye was preserved. No cerebral symptoms whatever had developed, and the recovery, which had been very rapid, was now complete, with the exception of some slight disturbances of vision, which it was hoped would, ere long, disappear.

A paper by **DR. EDWARD VON DONHOFF**, on

THE RADICAL CURE OF HERNIA,

was read by Dr. Milliken, Dr. von Donhoff having been suddenly called to Europe.

The curable variety of hernia, *par excellence*, aside from the anatomical situation of the lesion, the writer said, was that which occurs in the young and robust, and is presented in its recent condition for treatment. Among the cured were a few instances of spontaneous recovery, and it was more than probable that many of those seemingly aided by orthopædic apparatus would have progressed quite as well without it. In other cases nature brought about a safe condition for the subject of hernia, because the sac, being small, was confined to a narrow space, and, becoming firmly adherent and greatly thickened, afforded a more reliable safeguard than any mechanical adjustment that has as yet been devised. Very rarely had he known strangulation to occur within a sac of this description, and he said that if he should meet with such a case in the future he would content himself with relieving the stricture and (instead of amputating) endeavoring to bring about union at the point of necessary incision of the sac.

The only two good reasons for operative interference were (1) the existence of strangulation of the contents of the sac, or incarceration not relievable by taxis, etc., and (2) a dangerous condition growing out of causes other than strangulation, such as hæmorrhage into the sac, suppuration of the sac or its contents, or great size and cumbersomeness of the mass amounting to not merely a mechanical disability, but a menace to the patient's reason or life. Whenever a subject of any description suffering from strangulation or any other mischievously suggestive condition was presented for operation, an attempt should be made at radical cure, except when atrophic changes existed in the structures which it was necessary to unite. In nearly all cases it would be necessary to apply a ligature and amputate the sac, or, preferably, amputate and nicely join with numerous sutures the edges of the lumen. If the sac, however, were quite small and of normal appearance, it should invariably be returned intact, unless the treatment of its contents required an incision into it.

He believed that any method of treatment which involved the direct or indirect massing together of a heterogeneous collection of tissues, regardless of their histological peculiarities, would necessarily be attended with failure, and he said that he made this criticism with less hesitation from the fact that some years ago he reported a series of thirty-four cases in which the method pursued had similar technical faults. All of these which he had been enabled to follow up after the operation had been marked by a return of the hernia, after a very deceptive apparent cure, in a more formidable character than before. In this series of cases the *modus operandi* was as follows: The sac, having been exposed, was cut off close to the ring and the remaining lumen was closed by a sufficient number of sutures so placed as to include all overlying structures and the pillars, as well as the stump of the amputated sac. A number of auxiliary retention sutures completed the operation.

The causes of failure in these cases he believed to be: 1. Apposition of heterologous tissues. 2. Consequent abnormal cicatrization. 3. Resorption of effused plastic material and deciduation of tissue strata. 4. Recurrence of the extrusion because of the disappearance of the temporary support afforded by the semi-organized plastic mass plugging the lumen of the sac and developed as a part of the healing process, but now no longer continuous with the tissues which had become deciduated. After the operation he had made the mistake of furnishing most of the patients with a light truss, and he could not now but regard this as having had a most injurious effect upon the new cicatricial connective tissue formations. Eleven of the cases he had the opportunity of observing for a longer time than the others, and among these the average duration of apparent recovery was less than three months. In the remaining twenty-eight the time was probably much shorter, since they were individuals exposed to the dangers of severe physical exertion.

As to the McBurney operation for the radical cure of hernia, he had had the opportunity of inspecting the case-book of the outdoor department of the Hospital for Ruptured and Crippled, and so was enabled to speak with some degree of accuracy of certain results following this procedure therein recorded; although, of course, he could not estimate from this the proportion of failures in the total number of cases operated on. Having briefly described Dr. McBurney's operation, he said it was evident, from the results he had seen, that no fixed massing of tissues occurs between the pillars. As soon as this resorption was perfected the possibility and probability of the recurrence of the extrusion would be established. In the instances in which the cicatricial formation was scant, the prospect of immediate failure was greatly enhanced. It was relatively a piece of good fortune if permanent closure of the lumen of the ligatured and amputated sac was secured, and thus the possible added danger of a gut extrusion lacking that covering avoided.

No direct effort at closing the intercolumnar space was prescribed by the operation technique, unless the auxiliary sutures were so regarded. A not too remotely possible danger was complete disruption of the cicatricial barricade, especially if the mass should be subjected to much adventitious pressure by trusses, etc. It might also happen as an acute accident immediately following the recovery from the operation. He did not know that such an occurrence had been met with in any instance in which the McBurney operation had been done; but it was a perfectly rational possibility attendant upon any method looking for repair of the hernia breech and operation wound to a granulation process, and not directly contemplating the closure of the intercolumnar, or a similar, space by a close and permanent approximation of homologous physiological tissues.

The next portion of the paper was devoted to a description and condemnation of Dr. J. D. Bryant's operation, the special feature of which is the platting of the sac, from side to side, through a number of longitudinal slits made in the columns. In closing Dr. von Donhoff said that in such cases of inguinal hernia as were modified by very large openings, he had suggested a subcutaneous relaxation incision through the abdominal muscular planes (external and internal oblique muscles), for the purpose of permitting easy approximation of the edges of the ring after the necessary paring of the edges of the gap. He knew now that Bergmann, Esmarch, and other German surgeons were practicing a similar manœuvre; but, despite even this resource, in a certain proportion of this class of subjects any plastic operation must fail, because of the widespread character of the atrophic changes present.

Dr. W. B. De Garmo said that when the McBurney operation was first introduced he had very little faith in its efficacy; but he was free to confess that he had been surprised to see how many good results were reported from it. At the same time, he was still of the opinion that even this operation was not destined to have a long life, and he believed that eventually it would be found to be attended with as many failures as those which had preceded it. His experience confirmed that of the author of the paper as to the great difficulty of properly adjusting mechanical appliances in cases of operation where the hernia had afterwards returned. The paper was unsatisfying in that it left the whole subject very much where it was before. In the treatment of hernia he himself had perhaps had as much experience as any one in the country, and the only reason that he did not advise operation was because he had no faith in such a procedure resulting in permanent cure. He did not wish to be understood, however, as opposing an operation in all cases. There was one class of cases in which he would advise it, viz.: irreducible hernia; provided the patient were in suitable condition. But to operate in cases in which the hernia could be readily returned and could be kept up in position by a truss he did not believe was justifiable.

The operation which for the last two years he had himself employed in cases where operative interference was called for was that of Barker. He did not believe that anything was gained by destroying tissues, even if they were poor tissues, and he had selected this operation for the reason that if it did not prove successful it would not leave the patient in a worse condition than he was before. It consisted simply of clearing the canal of all foreign bodies (whether omentum or anything else), and then closing the canal; the external wound being closed by first intention. The healing process was rapid, and was usually completed in ten days.

Dr. Charles McBurney said that the actual cause of hernia, and that which acted continuously in keeping it up when once started, was the natural peritoneal pouch. This existed in almost every individual, and it led to a natural deposit of the intestines, and pressure therefrom, at that point. In operating in cases of hernia where such a procedure was called for his aim had been to get at the root of the evil, and to operate in such a way that the original conditions causing and maintaining the trouble should be removed. The tissue between the pillars on which so much stress had been laid in the paper was a myth which had been bothering surgeons for many years. It was absurd to expect to cure a hernia by simply fastening up the bottom of the sac at the external ring, which was situated a considerable distance below the real seat of trouble. If we wanted to effect a cure it was essential that we should remove the pouch entirely, for if the operation involved only the external ring we left the whole of the neck of the sac in the canal, extending up to the internal ring.

He could not see why Dr. von Donhoff should put back a sac simply because it was small. A small sac was liable to become a large one, and to involve the patient in the greatest possible danger. It was very evident to his mind that the one great reason why, in all the thirty-four cases referred to in the paper, there had been a relapse within three months, was because in all of them the operation was at the external abdominal ring. The explanation was simple. A portion of the sac was left; and just as sure as any part whatever of the sac remained, just so surely was it liable to become enlarged and give rise to a recurrence of the hernia.

The main idea of the method with which his name was associated was to get rid of the sac at the very highest point and to absolutely obliterate it. This had the effect of reducing the peritoneal lining at the internal abdominal ring to a level with the rest of the peritoneum, and thus did away with the tendency to pouch at this point. In order to give the requisite support from below he had endeavored to blend together, by a cicatricial process, all the tissues in the canal in the most thorough and complete manner. In the notice of his operation in the paper one very essential point had been entirely omitted. This was the drawing together of the skin and subjacent tissues to such an extent that a space only about ⅛ of an inch was left; that is, the smallest space that would admit the packing of iodoform gauze. The effect of this gauze packing was to secure healing from the bottom of the wound, and the process was purposely slow. The result was a very dense and strong cicatricial tissue.

He should be very unwilling to claim that this operation was an infallible cure for hernia. As to the cases of it referred to in the paper as failures, he did not know who had been the operators or anything about the circumstances connected with them; and Dr. von Donhoff's statements were certainly very vague and indefinite concerning them. He had himself seen some relapses, but they were exceedingly few, and in all the cases except one the relapse could be fully accounted for by certain existing circumstances which imperiled the success of the operation. But even if there had been other relapses, with which he was at present unacquainted, he would still believe that the principle on which the operation was based, to strike at the root of the trouble, was sound. The probabilities were that we should never have an operation which would make an individual better than he was originally, and he did not think a procedure could be devised which should be absolutely free from recurrences. In closing his remarks Dr. McBurney exhibited five patients in whom his operation had been followed thus far by brilliantly successful results. Most of the cases were of two years' standing, and in two of them there had been a double operation.

Dr. T. H. Manley said that during the past year he had performed the McBurney operation seventeen times, in all sorts of cases and on patients ranging from 73 years to less than 73 days old. Two of the patients had died, but they were in fact moribund at the time the operation was performed; and in all the others the result was perfect up to the present time.

Dr. A. P. Dudley said that the secret of Dr. McBurney's great success was that he went beyond other surgeons, and cut off the sac at the internal ring. The failure in many operations he believed was due to the fact that the operation was delayed too long. When a hernia was allowed to remain for many years the pillars of the ring were apt to become enormously dilated; and the difficulty of operating thus became very greatly enhanced.

When the discussion was concluded Dr. N. G. Bozeman exhibited an ingenious apparatus for the irrigation of deep cavities.

NECROLOGY.

A Tribute to the Memory of Dr. Charles S. Woods.

Report of a special committee to the Society of Medical Jurisprudence and State Medicine:

It becomes our painful duty, as a committee appointed by the Board of Trustees, to announce to the Society the loss of one of its most prominent members, and one of its founders, in the death of Dr. Chas. S. Wood. To those of you who remember the early history of this organization, the causes which led to its foundation and who recognized its early struggles for success, it is needless to mention the deceased as one of those energetic men to whom that success is in a great measure due. His gentle and suave manners helped to expedite the completion of the work, planned and conceived by a few whose ideas of right and liberty were totally at variance with the devious and irreconcilable practices of the officers of the parent Society, whose offspring though we unfortunately be, yet we have outstripped in the race for the promulgation of scientific facts and data. Of that parent, Dr. Wood was one of its most hard working members and become by his worth and endeavors one of its most honored Presidents. Always striving to do right, he expected truth and honor to be the motives of all, in the work to which his time and energies had been devoted. When he recognized that this work in others was but subsidiary in them to the purpose of a personal aggrandizement he with others animated by his own sense of honor rebelled, and sought to find in this Society a field for the investigation of scientific facts untrammeled by parliamentary bickerings and personal quarrels.

Although he persistently refused all offers of office, he took a keen interest in all matters relating to the Society's good and was a worker in the administration of its affairs. Had he lived longer he would have been compelled by his friends to have accepted the highest office which it is in the power of this Society to bestow.

Not only was his voice heard on all questions of policy but he was ever prepared to speak on the scientific subjects which were brought before us. We all remember his modulated, melodious voice harmonizing so well with his gentleness of character, and shall miss his ready argument and quiet humor.

Our loss cannot be replaced and, though forgetfulness is ever the attendant of those busy with their own aim in life, Dr. Wood will ever live in the remembrance of those, however occupied, who called him colleague and friend.

Dr. C. S. Wood was born in Litchfield, Conn., on the 27th day of February, 1825. After having taught school for a time he was graduated from the Jefferson Medical College of Philadelphia as a Doctor of Medicine. He entered upon the practice of his profession in Greene, Chenango Co., N. Y. When the war broke out he offered his services to the Union and was commissioned as Asst. Surgeon in the Sixty-sixth New York Regiment, and later as Asst. Surgeon U.S. Volunteers. After having served in all the battles of the Potomac until the time when Grant took command, he was transferred to the Staff of Gen. Wright and proceeded to San Francisco. The general hospital of the Presidio at that place was under his charge, and at the end of the war he was ordered to Alcatraz Island in San Francisco Bay. Soon after this he returned to New York (1867), and has made his residence here ever since.

Such in brief was the life history of the man who was one of the most earnest of our Society. Conservative, and yet ever ready to adopt reasonable innovations, he could not be moved from the path which reason and personal experience told him to be right. He was made of so firm a mould that one could ever rely upon his taking the side of truth and justice even when every other interest was opposed. In him we have lost so firm a support that our expression of condolence to his family is but an insufficient tribute to his worth, and the following resolutions, which I hope the Society will take the necessary steps to adopt, to have spread on the minutes, and to have transmitted to the deceased member's family, are inadequate utterances of our loss. No more will his genial face be seen in our midst; of him we have but the memory, yet his work will live.

Be it by the Society of Medical Jurisprudence and State Medicine

Resolved, That in the death of C. S. Wood, M.D., this Society has sustained a loss whose weight falls heavily upon us, a loss which never can be replaced. Be it

Resolved, That this Society recognize the probity and purity of the deceased, who was ever watchful of our affairs, who aided us with his judgment, and taught us from his wide experiences. Be it

Resolved, That the science of medical jurisprudence is deprived, by the death of Dr. C. S. Wood, of one of its ablest votaries and brightest lights, of a man of eminent abilities and stern integrity.

N. E. Brill, M.D.,
E. C. Spitzka, M.D.,
A. M. Jacobus, M.D.,
Committee.

Charles B. Goldsborough, A.M., M.D.

Dr. Goldsborough, Surgeon, U. S. Marine-Hospital Service, was born at Elkton, Cecil County, Md., December 10th, 1850. After a preparatory course at a classical school in Baltimore and at the Episcopal Academy in Philadelphia, he entered the classical department of the University of Pennsylvania in 1868, and was graduated in June 1872 with the degree of B.A. Besides being the orator of his class, he was subsequently appointed instructor in Latin and Greek at the Episcopal Academy. About this time Dr. Goldsborough entered the medical department of his alma mater, and was graduated with honor March 10th, 1876. He now received the prize for the best class essay, the subject being salicylic acid, and also the Hodge gold medal for the best record in the dissecting room. He was then appointed assistant demonstrator of anatomy at the University, and was elected a member of the Pathological Society. In April, 1876, he received the appointment of resident physician in the Episcopal Hospital, Philadelphia, and served the full term of sixteen months. On the completion of his tour of service at the hospital Dr. Goldsborough appeared before the examining board of the Marine-Hospital Service, and passed first in a large class of applicants. He was appointed Assistant Surgeon, September, 1877, Passed Assistant Surgeon, October, 1880, and Surgeon, September, 1886. He served at various stations, on special duty at Washington and elsewhere to 1879. At Baltimore from 1879 until March, 1882, next as Surgeon in Charge, at Mobile, Alabama, to October, 1885. From this date until February, 1888, he was in charge of the Marine-Hospital at Chicago, Ill. His final service was in charge of Marine-Hospital, New Orleans, where he died in harness, of heart failure, January 5th, 1890.

Dr. Goldsborough was a most efficient officer, thoroughly alive to the interests of the service in every department. An excellent surgeon and well trained in hygiene, his great talent and experience produced a combination invaluable to the service.

His comrades regret his loss, and may well emulate his record. F. I.

ASSOCIATION NEWS.

The Annual Meeting at Nashville, May 20.

By special resolution the Permanent Secretary was appointed to obtain rates an all the lines of travel to Nashville. In order to have some basis upon which to make these arrangements it is necessary that he should be informed as to the number of those who may wish to avail themselves of this opportunity and also the roads or lines over which they must reach Nashville. Therefore, delegates and members are urgently requested to inform the undersigned at the earliest moment.

From the present advices it is believed that reduction of the rate will be sufficient to induce a very large attendance.

Wm. B. Atkinson, M.D.
1400 Pine street, Philadelphia, Pa.

Report of the Committee on Foreign Transportation.

To the Editor:—The Committee on Foreign Transportation have finally arranged as follows:

The Netherlands-American Steam Navigation Co. being the only line that would allow any reduction sufficient to be worth mentioning and on times of sailing suitable for our delegates agree to give us transportation to Boulogne, France, or Rotterdam, Amsterdam, Holland, from New York and return for $90 in first-class rooms inside or $105 outside, this *only* to *our own members* and *their families*.

Sailing from New York in May, June, or July as follows:

May 1st, 8th, 15th, 22nd, 29th, June 5th, 12th, 19th, 26th, July 3rd, 10th, 17th. Berths for May steamers must be engaged before April 15th; June, by May 1st; and July by May 15th. After these dates the company may dispose of all berths on said steamers not engaged. Of course those who secure berths first get the best places. All the steamers are alike in first-class accommodations.

For those who desire it, free passage will be granted from Rotterdam, Amsterdam via Flushing Queensboro' to London on the outward trip. The boats running between Flushing-Queensboro' carry the mail of Northern Europe to and from Great Britain. This route is the most direct and favorite one from London to Berlin, and the steamers are all elegantly furnished. There is a day and night service, the boats running in the night all have state rooms.

For reserving berths on the steamer from New York a deposit of $10 each person is required. The balance of the passage money must be paid at least two weeks prior to sailing.

These steamers cross in eleven to twelve days, some do it in less time.

Railroad fare from Rotterdam to Berlin, 1st class $13.60; 2nd class, $10.40; Amsterdam to Berlin, 1st, $13.70; 2nd, $10.50. Boulogne to Paris, 1st, $6.00; 2nd, $4.50.

The table and attendance on the steamers to be of the best.

Efforts are being made to obtain a reduction in the railroad fares as above. This will be announced in the Journal as soon as obtained.

(Signed) Wm. H. Pancoast, Ch'm. of Com.
W. B. Atkinson, Sec'y.

Those who have already notified the secretary of their intention to go to Berlin will in due time receive the proper certificate which will entitle them to these rates. Those who have not sent their names are requested to do so at an early date. Yours truly, Wm. B. Atkinson.

Philadelphia, Feb. 20th, 1890.

International Medical Congress of 1890.—Special Notice.

All those who propose to attend the session of the International Medical Congress in Berlin next August are requested to forward to the undersigned their names and the number of tickets they will require. Arrangements are now in progress to obtain special rates on the lines to Europe. For the committee,

Wm. B. Atkinson, M.D.,
Permanent Sec'y Am. Med. Ass'n.

Instructions to Delegates.

Members of the Association who design to attend the annual meeting at Nashville, May 20, 1890, will be granted a reduction in their return railroad fare only, under the following conditions:

First.—Each person must purchase a first-class ticket (either unlimited or limited) through to the place of meeting, for which he will pay the regular tariff fare, and upon request the ticket agent will issue to him a certificate of such purchase (Form 2).

Second.—If through tickets cannot be procured at the starting point the person will purchase to the most convenient point where such through ticket can be obtained, and there repurchase through to the place of meeting, requesting a certificate properly filled out by the agent at the point where the repurchase is made.

Third.—The reduced rate for the return journey will only apply to points to which through tickets are on sale at the place of meeting, and at which through tickets to the place of meeting were purchased. If through tickets to the starting point can not be procured at the place of meeting, the person will purchase to the most convenient point to which such through ticket can be obtained.

Fourth.—Tickets for the return journey will be sold by the ticket agents at the place of meeting, at one-third the highest limited fare, only to those holding certificates (Form 2), signed by the ticket agent at the point where the through ticket to the place of meeting was purchased and countersigned by the secretary or clerk of the convention, certifying that the holder has been in attendance upon the convention.

Fifth.—It is absolutely necessary that a certificate be procured, as it indicates that the full fare has been paid for the going journey, and that the person is therefore entitled to the excursion fare returning. It will also determine the route via which the ticket for return journey should be sold, and without it no reduction will be made.

Sixth.—Tickets for return journey will be available for continuous passage *only*; no stop over privileges being allowed on tickets sold at less than full fare. Certificates will not be honored unless presented within three days after the date of adjournment of the convention.

Seventh.—Ticket agents will be instructed that excursion fares will not be available unless the holders of certificates are properly identified, as above described, by by the secretary or clerk, on the certificate, which identification includes the statement that one hundred or more persons, who have purchased full fare tickets for the going passage, and hold properly receipted certificates, have been in attendance at the meeting.

The certificates are not transferable, and the signature affixed at the starting point, compared with the signature to the receipt, will enable the ticket agent to detect any attempted transfer.

N. B. Please read carefully the above instructions, be particular to have the certificates properly filled and certified by the railroad agent from whom you purchase your going ticket to the place of meeting, as the reduction on return will apply only to the point at which such through ticket was purchased.

American Medical Association.

The forty-first annual session will be held in Nashville, Tenn., on Tuesday, Wednesday, Thursday and Friday, May 20, 21, 22 and 23, commencing on Tuesday at 11 A.M.

"The delegates shall receive their appointment from permanently organized State Medical Societies, and such County and District Medical Societies *as are recognized by representation in their respective State Societies*, and from the Medical Department of the Army and Navy, and the Marine-Hospital Service of the United States.

"Each State, County and District Medical Society entitled to representation shall have the privilege of sending to the Association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number; *provided*, however, that the number of delegates for any particular State, territory, county, city or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the Association."

Members by Application.—Members by Application shall consist of such members of the State, County and District Medical Societies entitled to representation in this Association as shall make application to the Treasurer and accompany said application with a certificate of good standing, signed by the President and Secretary of the society of which they are members, and the amount of the annual membership fee, five dollars. They shall have their names upon the roll, and have all the rights and privileges accorded to *permanent members*, and shall retain their membership upon the same terms.

The following resolution was adopted at the session of 1888:

"That in future each delegate or permanent member shall, when he registers, also record the name of the Section, if any, that he will attend, and in which he will cast his vote for Section officers."

Secretaries of Medical Societies as above designated are earnestly requested to forward, *at once*, lists of their delegates.

Also, that the Permanent Secretary may be enabled to erase from the roll the names of those who have forfeited their membership, the Secretaries *are*, *by special resolution*, requested to send him annually a corrected list of the membership of their respective societies.

AMENDMENTS TO THE BY-LAWS.

Offered by Dr. A. L. Gihon, United States Navy.

That the first day of the meeting of this Association shall be on the first Wednesday of May or June respectively, instead of Tuesday.

By Dr. X. C. Scott, Ohio:

That the Committee on State Medicine be abolished, inasmuch as the Section on State Medicine occupies the entire ground.

ADDRESSES.

On General Medicine, by Dr. N. S. Davis, Chicago, Ill.

On General Surgery, by Dr. Samuel Logan, New Orleans, La.

On State Medicine, by Dr. Alfred L. Carroll, New York, N. Y.

Committee of Arrangements: Dr. William T. Briggs, Nashville, Tenn.

WILLIAM B. ATKINSON, Perm. Sec'y.

BOOK REVIEWS.

CLINICAL LECTURES ON VARICOSE VEINS OF THE LOWER EXTREMITIES. By WILLIAM H. BENNOTT, F.R.C.S., Surgeon to St. George's Hospital, etc. With Illustrations. London and New York: Longman, Green & Co. 1889. Chicago: A. C. McClurg & Co. Price $2.

These valuable clinical lectures, which in the main were published recently in *The Lancet*, represent the experiences of the author at St. George's Hospital between the years 1880 and 1888. The practical information contained in this little volume will be found of special value in the treatment of varicose veins. It treats of the parts involved; of the probable causes; the complications which are to be found; the management of ordinary cases without operation, while the last lecture is devoted to the details of operative treatment both palliative and curative. While not claiming to be an exhaustive treatise upon varix, it nevertheless so fully considers the subject as to render it a very valuable manual in the hands of busy practitioners.

ESSAY ON MEDICAL PNEUMATOLOGY. A Physiological, Clinical and Therapeutic Investigation of the Gases. By J. N. DEMARQUAY, Surgeon to the Municipal Hospital, Paris, and of the Council of State, etc. Translated with Notes, Additions and Omissions, by SAMUEL S. WALLIAN, A.M., M.D., Ex-President Med. Ass'n. of Northern New York, etc. Pp. xv, 300. Net price, cloth $2, half russia, $3. Philadelphia and London: F. A. Davis. 1889.

This is an abridged translation of Demarquay's extensive treatise on the therapeutical application of the various gases, and contains an excellent account of the history, physiological action, preparation and administration of oxygen, together with a very brief note of the uses of nitrogen and hydrogen and a short review of the translator's own experience in the use of these gases. The work will form a useful addition to the somewhat meagre literature of the subject, particularly as regards the English language.

MISCELLANY.

LETTERS RECEIVED.

Dr. W. Frank Grinstead, London, Eng.; Dr. J. N. Dixon, Springfield, Ill.; The Illustrated Medical News Co., London, Eng.; Valentine's Meat Juice Works, Richmond, Va.; Kegan Paul, Trench, Trubner & Co., Ld,, London, Eng.; Dr. R. A. Martin, Jr., Petersburg, Va.; Dr. H. W. Quirk, Cleveland, O.; Dr. David S. Booth, Belleville, Ill.; Dr. T. L. Wright, Bellefontaine, O.; Reed & Carnrick, New York; Dr. T. D. Crothers, Hartford, Conn.; National Folding & Enveloping Co., Chicago; Arch. Maxwell, Austin, Tex.; Myer Bros., St. Louis, Mo.; Woman's Medical College, Cincinnati, O.; F. C. Lewis, Catskill, N. Y.; W. P. Cleary, New York; Jefferson Medical College, Philadelphia; Fairchild Bros. & Foster, New York; Geo. Cheatham, Brooklyn, N. Y.; The American & Continental Sanitas Co., New York; Braidwood & Stahl, Keokuk, Ia.; Dr. J. H. Smith, Dallas, Tex.; Dr. C. Jane Vincent, Allegheny, Pa.; Jules Peelman & Cie., Paris, France; Dr. Geo. A. Zeller, Peoria, Ill.; Dr. G. C. Smith, Natick, Mass.; Dr. S. V. Ronsig, Roger's Park, Ill.; Dr. E. E. Russell, New York; R. L. Watkins, Prospect, O.; Dr. C. C. Leeper, Braymer, Mo.; Dr. Bane, Pittsburgh, Pa.; Dr. C. F. Stillman, Chicago; N. W. Ayer & Son, Philadelphia; Publishers Commercial Union, Chicago; Dr. T. S. Wescott, Philadelphia; Arkansas National Bank, Hot Springs, Ark.; Peacock Chemical Co., St. Louis, Mo.; Dr. O. H. Hall, Ionia City, Mo.; Dr. E. K. Nash, Montrose, O.; Dr. D. Rankin, Allegheny, Pa.; Rio Chemical Co., St. Louis, Mo.; D. Ayers, Syracuse, N. Y.; Dr. J. A. Webb, Providence, R. I.; Dr. Kilpatrick, So. Omaha, Neb.; Farwell & Rhines, Watertown, N. Y.; Dr. A. Reeves Jackson, Chicago; E. S. Burnham, New York; W. F. Holloway. Cuyahoga Falls, O.; Dr. E. Flether Ingalls, Chicago; Dr. R. Harvey Reed, Mansfield, O.; Dr. Mary H, Thompson, Chicago; Dr. J. A. Hinton, Friendship, Tenn.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from February 15, 1890, to February 28, 1890.

Capt. Samuel Q. Robinson, Asst. Surgeon, now on duty at Ft. Hamilton, N. Y., is relieved from duty in the Div. of the Atlantic, and will report in person to the Superintendent, U. S. Military Academy, West Point, N. Y., for temporary duty at the Academy, to relieve Capt. Wm. L. Kneedler, Asst. Surgeon. Par. 4, S. O. 43, A. G. O., February 20, 1890.

Capt. William L. Kneedler, Asst. Surgeon U. S. A., upon being relieved from duty by Capt. Robinson, will report at Jackson Bks., La., for duty at that station, relieving First Lieut. Freeman V. Walker, Asst. Surgeon. Upon being relieved, Asst. Surgeon Walker will report at Ft. D. A. Russell, Wyo., for duty at that station. Par. 4, S. O. 43, A. G. O., February 20, 1890.

PROMOTIONS.

Lieut.-Col. Joseph R. Smith, Surgeon, to be Surgeon with rank of Colonel. February 9, 1890.

Major Dallas Bache, Surgeon, to be Surgeon with rank of Lieut.-Colonel. February 9, 1890.

Capt. Philip F. Harvey, Asst. Surgeon, to be Surgeon with rank of Major. February 9, 1890.

LEAVE OF ABSENCE.

Major J. H. Patzke, Surgeon, leave of absence for seven days granted in order No. 25, Ft. Huachuca, Ariz., February 12, 1890, to take effect the 14th inst., is extended twenty-three days. Par. 1, S. O. 18, Dept. Ariz., February 17, 1890.

Major Leonard Y. Loring, Surgeon, having been found incapacitated for active service by an Army retiring board, the extension of leave of absence on surgeon's certificate of disability granted him in S. O. 34, February 10, 1890, from this office, is, by direction of the Secretary of War, still further extended until further orders on account of disability. Par. 3, S. O. 46, A. G. O., Washington, February 25, 1890.

By direction of the Secretary of War, a board of medical officers, to consist of: Major Charles Smart, Surgeon; Capt. Valery Howard, Asst. Surgeon; Capt. Louis Brechemin, Asst. Surgeon, is appointed to meet at Ft. Leavenworth, Kan., on March 15, 1890, or as soon thereafter as practicable, for the purpose of preparing a manual of drill and instruction for the members of the Hospital Corps, and to examine the equipment of the Corps with a view to its improvement. Par. 9, S. O. 47, A. G. O., Washington, February 26, 1890.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending March 1, 1890.

P. A. Surgeon C. W. Rush, ordered to the Navy Yard, New York.

P. A. Surgeon E. W. Auzal, ordered to the U. S. S. "Galena."

CORRIGENDUM.

On page 305, of the issue of March 1, line 13 from top of first column, the sentence commencing "Applications of a solution," etc., should read: "Applications of a solution of chloride of zinc to the affected *laryngeal* tissues and a correction of the deformed septum with a Bosworth saw soon yielded entire relief;" and should appear as a description of the treatment of Case 2.

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ADDRESSES.

HOMŒOPATHY AND MEDICAL PROGRESS DURING THE PRESENT CENTURY.

President's Address, read at the meeting of the Syracuse Medical Association, January 14, 1890.

BY NATHAN JACOBSON, M.D.,
PROFESSOR OF CLINICAL SURGERY AND LARYNGOLOGY, COLLEGE OF MEDICINE, SYRACUSE UNIVERSITY.

I purpose, this evening, directing your attention to homœopathy, and particularly to its principles as enunciated by Hahnemann and the manner in which they have been influenced by medical progress, and briefly to compare its achievements with those of scientific medicine during the present century. To appreciate fully the condition that made homœopathy a possibility, it is necessary that we consider the tenor of medical thought and teaching during the eighteenth century.

The eighteenth century was the age of systems and theories. There existed an abundance of material obtained from observation and the natural sciences, but it remained undigested. One hundred years before, Sydenham had written: "The improvement of physic, in my opinion, depends first upon collecting as genuine and natural a description and history of disease as can be procured; second, upon laying down a fixed and complete method of cure." But the profession failed to pursue the paths of careful observation, and had been led to believe that some fixed law controlled the development of all forms of disease, and innumerable theories were propounded to explain the occurrence of all diseased manifestations. A few will illustrate the tendency of the age.

Stahl created the dynamico-organic system. The soul was made the supreme principle of disease which alike causes and cures. Stahl scorned anatomy and physiology, and was an enemy of erudition and authorities.

Hoffmann introduced the mechanico-dynamic system. In the body, he taught, life expressed itself in motion. Death was the cessation of all movement. But these mechanical phenomena, in their normal and abnormal manifestations, were controlled by a nervous spirit, which he saw fit to define as "the æther."

Then there was the school of Montpelier, which taught that the various organs possessed an individual life—that the stomach, heart and brain formed the "tripod of life." As the vital principle was the cause of all phenomena of life in the human body, all disease was the result of an affection of the "vital force." In Germany a more energetic school endorsed the doctrine of vital force, believing that an inseparable union of force and matter existed in the various organs of the body.

Darwin also had a system uniting, in some ethereal way, spirit and matter, as a result of which there occurred in the human body vital, periodic and chemical movements.

Mesmer, too, that prince of imposters, posed as the apostle of a new doctrine, claiming that everywhere throughout nature the magnetic fluid flowed from the hand, pouring out its healing influences upon all susceptible to it.

The Brunonian system received many supporters. It was unnecessary to make any special diagnosis; it required no fixed symptomatology; it made no distinction between local and general diseases. All that was required was to determine the grade of disease in accordance with the strength or weakness of the active irritation. The art of the physician was simply to adjust the right proportion of strengthening or weakening medicines to the case; to determine whether the condition was sthenic or asthenic, and act accordingly.

It is unnecessary to refer to the phlogistic and antiphlogistic theories; to the doctrine of infarction, or, in reality, fæcal impaction, as a universal cause of disease; to Cullen's theory of nervous force, or the efforts made by the old Vienna school to create a place for clinical instruction. It is but necessary to remind you further that chemistry was merely a suggestion of its present self, oxygen having been but discovered; that physiology, pathology and histology existed but in their merest infancy; that, more than all, the bitterest opposition of the different theories existed toward each other. In this chaotic age, when real investigation had been neglected and speculative philosophy seemed to take possession of even the best minds, another theorist announced another universal hypothesis for the development and cure of disease.

Samuel Hahnemann was born in 1755 in Meissen, Germany, pursued his studies at Leipsic and Vienna, and graduated in 1779 at Erlangen. It is said that, being dissatisfied with the discordant theories and methods of treatment of his time, he abandoned practice and sought seclusion for reflection and study. In 1790, *just 100 years ago*, he promulgated his first writings. It was then that Cullen's Materia Medica had been translated into German, and in it, for the first time, occurred the recommendation of Peruvian bark for malarial difficulties. This awakened in Hahnemann's mind the idea that the virtue of the drug depended *upon its ability to excite malarial symptoms in a healthy man*, the proof of which he claimed to have established in his own case. With this, then, fixed in his mind as the fundamental hypothesis of drug administration, he resumed his practice in 1796.

He began at once to write largely, addressing himself alike to the laity and the profession, and received as students, to whom he delivered lectures, all applicants, irrespective of any or no previous medical education. In 1805 he first used the term "homœopath," and referred to those pursuing any of the many other systems in vogue as "allopathists."

His main work, the "Organon der Rationellen Heilkunde," appeared in 1810. Besides being a polemic against medical practice of his day, it contained a full statement of his own theories. His other works were "Reine Arzeneimittellehre," published from 1811–1821, and his last large work on "chronic diseases," which appeared in 1828.

As it has been possible for me to obtain of his works only the Organon, to thoroughly elucidate his doctrines I shall have to refer additionally to reviews of his other literary productions written by Jürgensen, entitled "Wissenschaftliche Heilkunde und ihre Widersacher," 1872, which was published in Volkmann's Sammlung, and "Die Homœopathie Hahnemanns und die der Neuzeit," by Carl Kœppe, 1881. The edition of the Organon to which I shall have occasion to refer is the fifth American, translated from the fifth German by C. Wesselhœft, M.D., in 1875, and published by F. E. Boericke in 1887. We are assured at the outset by the translator, in his preface, that "Hahnemann's Organon of the art of healing still continues to be the foundation which bears the new and growing school of medicine known as that of homœopathy."

The Organon is composed of an introduction, the work proper, which consists of 292 paragraphs, 151 explanatory notes and an appendix, endorsing mesmerism and teaching its proper application.

I shall attempt, as briefly as possible, to present to you the principles of homœopathy, and this I believe can best be done by answering two questions from the standpoint of Hahnemann: (1) What is the nature of disease, and (2) upon what theory must its cure be attempted?

What is the nature of disease? There is no difficulty in reaching Hahnemann's conception of the essential nature of disease. In his introduction we find stated in italics, "Diseases will not cease to be (spiritual) dynamic aberrations of our spirit-like life, manifested by sensations and actions." He is quite wrought up at the claims made by the pathologists of his day, who were asserting that material changes occurred in the body when affected by disease, for he completes the sentence quoted by saying, "That is, they will not cease, for the sake of those foolish and groundless hypotheses, to be immaterial modifications of our sensorial condition." In answer to those who claimed to cure diseases of the skin by local applications, to remove tumors, glandular swellings, fistulæ, necrosis and a host of other surgical affections by operative measures, he says: "But mark the result! Metastases is sure to appear sooner or later (but which are then pronounced as new diseases), and invariably more serious than the primary disorder, refute their assertions sufficiently, and could or should undeceive them by disclosing the deeper immaterial nature of the evil, as well as its dynamic (spirit-like) origin, to be combated only by dynamic processes."

In section 9 of the Organon we find this statement: "During the healthy condition of man this spirit-like force (autocracy) animating the material body rules supreme as dynamis," while section 11 reads: "In sickness this spirit-like, self-acting (automatic) vital force omnipresent in the organism is alone primarily deranged by the dynamic influence of some morbid agency inimical to life. Only this abnormally modified vital force can excite morbid sensations in the organism and determine the abnormal functional activity which we call disease. This force, itself invisible, becomes perceptible only through its effects upon the organism, makes known and has no other way of making known its morbid disturbance to the observer and physician than by the manifestation of morbid feelings and functions; that is, by symptoms of disease in the visible material organism."

Disease, then, from the Hahnemannian standpoint, is a spiritual manifestation, a disturbance of the spirit force which animates our body, and which is called dynamis. As this term permeates all homœopathic literature and is used in defining not only the nature of disease, but the character of the power exerted *by drugs, its real definition* is not to be misunderstood.

Hahnemann recognized no physical signs; he discountenanced physical examination. True, when he first wrote, at the close of the last century, Auenbrugger, Corvisart and Læennec had not revealed to the medical world the wealth of learning this branch of our art was to unfold; yet when he issued his fifth edition, in 1833, physical science had become the common property of the profession. Subjective symptoms were to Hahnemann the guiding stars of treatment. Hahnemann simply followed the other theorists of the earlier part of the eighteenth century, Stahl, Hoffmann and the many other so-called philosophers who reasoned by induction, and not physical observation. To all of them disease was but a disturbance of our dynamic, our soul life. Pathology had not yet laid bare the material nature of disease. Hahnemann argued as follows in support of his theory, as against the material nature of disease: "Washing the sexual organs, even if immediately and carefully done, never is a protection against infection by venereal chancre. A breath of air wafted over one afflicted with small-pox can call forth this horrid disease in a healthy child. . . . . Is it possible to admit the existence of material morbific matter and its transition into the blood in this and all such cases? A letter written in the sick-room and sent a great distance has often imparted to the recipient the same miasmatic disease. Can material morbific matter be thought of in this case as having permeated the humors of the body?" On the other hand he tells of dangerous bilious fever resulting from a mortifying altercation; of a superstitious prophecy of death coming true at a predicted time; of sudden news causing instantaneous death, and then concludes his summary with these words: "The defenders of an assumption so gross as that of morbific matters should blush to have so inconsiderately overlooked and misunderstood the spiritual nature of life, as well as the spiritual dynamic power of pathogenetic causes, thereby having degraded themselves to the level of medical scavengers who, instead of curing, destroy life by their endeavors to expel morbific matter from the diseased body, where it never existed."

I quote this sentence in full to illustrate the spirit in which the whole work is written. It contains any number of similar charges, assailing the profession on nearly every page with the severest accusations. In section 72, two classes of diseases are further defined, the acute, which "includes rapid morbid processes caused by abnormal states and derangements of the vital force," which run their course in a brief period, and the chronic, "which, in a manner peculiar to themselves, act deleteriously upon the living organism, dynamically deranging the latter," and are originated by "infection with a chronic miasm." In sections 78, 79 and 80 we are treated to a description of the miasms which are capable of destroying the equilibrium of our soul life in the specific way described. These are syphilis, sycosis, and lastly and most important of all, psora.

Syphilis, we are told, had been recognized as one of the chronic miasmatic diseases; but sycosis, and by that is meant "Feigwarzenkrankheit," or venereal warts, had not been previously so regarded, but we are assured that it possesses such properties. However, it is psora which is—and I quote literally from section 80—"the only real fundamental cause and source of all the other countless forms of disease figuring as peculiar and definite diseases in books on pathology under the names of nervous debility, hysteria, hypochondriasis, mania, melancholy, idiocy, madness, epilepsy and convulsions of all kinds, softening of the bones (rachitis), scotiosis and kyphosis, caries of the bone, cancer, varices, pseudoplasms, gout, hæmorrhoids, icterus and cyanosis, dropsy, amenorrhœa, hæmorrhages from the stomach, nose, lungs, bladder or uterus, asthma and suppuration of the lungs, impotency and sterility, sick headache (hemicrania), deafness, cataract and glaucoma, renal calculus, paralysis, deficiency of the special senses and pains of every variety."

Truly psora must be a thing to be feared. It is responsible for seven-eighths of all chronic diseases, and this category includes a variety of ills which makes one shudder to think of the afflictions that may be in store for him whom the psora miasm might strike.

There can be no question as to what Hahnemann understood by these miasms. We find many references to them in the Organon; section 204 will suffice. He says, after referring to them specifically: "Each of these must have pervaded the entire organism and penetrated all its parts before the primary representative local symptom peculiar to each miasm (itch eruption of psora, chancre and bubo of syphilis, and condyloid excrescences of sycosis) makes its appearance for the prevention of the inner disease."

But this will suffice as an answer to our first question.

Second, upon what theory must its cure be attempted? Diseases are called "natural," while every effort directed to their cure by the administration of medicines is said to create an "artificial" affection, a drug disease. It is argued, beginning with section 36, that similar and dissimilar diseases of varying intensity may coexist in the body. But to effect a cure we learn, in section 70, that of all methods of treatment directed to any disease, "the only really salutary treatment is that of the homœopathic method, according to which the totality of symptoms of a natural disease is combated by a medicine in commensurate dose capable of creating in the healthy body symptoms most similar to those of the natural disease; and as diseases are only dynamic disturbances of the vital force, they are overcome without additional suffering, and having been perfectly and permanently extinguished, they must cease to exist."

The manner in which the patient escapes *from* the conflict excited between the drug and the natural disease is further stated in section 29, which says, "by administering a medicinal potency chosen exactly in accordance with the similitude of symptoms, a somewhat stronger, similar, artificial morbid affection is implanted upon the vital power deranged by a natural disease; this artificial affection is substituted, as it were, for the weaker similar natural disease (morbid excitation) against which the instinctive vital force, now only excited to stronger effort by the drug affection, needs *only* to direct its increased energy; but owing to its brief duration it will soon be overcome by the vital force, which, liberated first from the natural *disease*, and *finally from* the substituted artificial (drug) affection, now again finds itself enabled to continue the life of the organism in health."

Next it remained to ascertain what drugs possessed this ability to create a so-called drug disease similar to the natural one. For this purpose Hahnemann adopted a plan suggested by Albrecht von Haller in 1771 of administering drugs to healthy individuals and noting the manifestations which supervened. This was called "proving a drug." Some fifty paragraphs are devoted to the directions to be followed in conducting these "provings." While in section 141 it is admitted that "the most desirable provings are those which the healthy unprejudiced physician has made upon himself," yet individuals of both sexes without regard to any medical qualifications were selected and permitted to record, of course with great exactness, any and every manifestation. "The physician should examine the report immediately after the termination of the experiment" we are told (section 139). Evidently not always the educated were selected as the testors, for it appears (section 140) that "if the prover is not skilled in writing, the physician should inquire every day concerning the nature of the symptoms."

The action of drugs was studied both as to their "primary effect," which was presumed to be an alteration of the "harmony of the vital forces" (section 63) and the later resulting conservative reaction described as an automatic activity of the vital force, and which is called the "after effect" or "counter effect." Of course only a single drug is to be administered, and it is truly remarkable that given in an attenuated dose how very long was found to be the *period of* its activity, and the multiplicity of symptoms it was said to produce.

Following a single minute dose of lycopodium, which is presumed to be inert and as such was and is dusted upon pills, there appeared a train of symptoms in number 1,608 of very remarkable character and continuing for a period of from forty to fifty days.

One decillionth of a grain of table salt awakened a frightful train of symptoms including headache, interference with sight and hearing, great gastric distress, nausea, vomiting, intestinal colic, a variety of menstrual irregularities, respiratory difficulties, dyspnœa, palpitation, and enough more to reach an aggregate of 1,349.

The various drugs we are told act not upon the material organism but producing their impression through the nervous system, they awaken the necessary *dynamic* changes. And, therefore, every part of the body endowed with sensitive nerves, is capable of receiving the influence of medicines and transmitting their power to other parts. Though the stomach, tongue and mouth are most susceptible to medicinal impressions, the lining membrane of the nose possesses this susceptibility to a high degree (section 289-90). So that in patients who are very excitable and weak, remedies may be administered by olfaction. Of the efficacy of this particular method of administering remedies, Hahnemann says, in note 149, he is convinced; being assured that the power of the medicine is at least of the same degree of intensity as when administered by the mouth; and should, therefore, be repeated at the same intervals. In that I rather think we can agree with him. But in whatever method administered the chosen remedy should be of such an attenuated strength, or rather weakness, that it should awaken the least possible reaction. And we are further assured *in section 160 that the dose of* no homœopathic remedy can be reduced to such a degree of minuteness as to make it powerless to overcome and to completely cure any analogous natural disease of recent origin and undisturbed by injudicious treatment.

The selection of the dose was in Hahnemann's mind a most important desideratum. He chose preferably the 30th dilution; in other words one decillionth of a grain of a crude drug *or drop* of a fresh vegetable juice.

Mathematicians have attempted to give us some conception of the degree of dilution thus attained. Munk puts *it this way: A cubic foot* of water contains 3,000,000 drops, a *cubic mile* 780,000 trillion drops, the earth *contains* 2,662 million cubic miles, and, therefore, *has* a capacity of 2,080 quinquillion drops. So *that* the 30th dilution, that is to say *one decillion drops*, has the capacity of a body of water equal *to* 480,769 worlds the size of our own. One drop of medicine *in such a body* of water, thoroughly shaken, yields *wonderful results; one* drop of a decillionth dilution of Indian currant berries produces hemiplegia, and one drop of a solution of *table* salt of the same strength will continue its effects, as above described, for fifty days.

Hahnemann himself *must* have been amazed at the results of his wonderful discovery, and as even he could not reason that these marvellous properties were to be attributed to the material virtue of the drugs, he concluded that their effects must likewise be of that inexplicable dynamic character possessing to a rich extent the same spirit-like properties presumed to be the essential character of disease itself.

And so we find in sections 160, 269-270 this very plainly stated. Their specific virtues are imparted to the remedies by trituration or dilution. For example he writes: "Thus, two drops of the fresh vegetable juice mixed with an equal proportion of alcohol, are diluted with 98 drops of alcohol, and potentiated by two successions of the hand, this is the first development of power (potency). The same process is then to be repeated with 29 successive vials, each vial to contain 99 drops of alcohol, filling three quarters of the vial; this second vial is then to be shaken twice, and so on to the 30th development of power; this is the potentiated decillionth old dilution, and the one to be commonly used." Now to quote again, "through this simple process, the powers hidden and dormant as it were in the crude drug are developed and called into activity in an incredible degree. In this way the medicinal powers, even of substances hitherto considered inert, are most effectually developed," and finally the clear explanation of all in section 269 reads: "to serve the purpose of homœopathy, the spirit-like medicinal powers of crude drugs are developed to an unparalleled degree."

Then in section 286 follows the equally remarkable explanation of the manner in which these dilutions impart their strength. "A homœopathic dose is augmented by increasing the quantity of fluid in which the medicine is dissolved, preparatory to its administration, while the actual quantity of medicinal substance remains the same. In using a solution of this kind, a much greater surface supplied with sensitive nerves, susceptible of medicinal influence, is brought in contact with the medicine." And finally in section 288 we are told in this liquid form, the medicine spreads through the organism with such inconceivable rapidity, that this effect may with propriety be defined as spirit-like, dynamic." And thus we have fully unfolded the theory of homœopathic practice as laid down by Hahnemann.

As to the claims made for it by Hahnemann we find stated in sections 24, 54 and 70 that the theories here presented are alone the true principles to guide in medical practice. It is not one out of many laws, but it is exclusively the law and that most emphatically.

It remains for us to see what has been the history of homœopathy since its early promulgation. It remained unchanged until the third decade of our century. Its success during the lifetime of Hahnemann was partially due to the period of its birth, which as has been seen was *at a time* when similar ideas of the nature of disease were quite prevalent, but particularly as his teaching was directed to the populace and satisfied their longings for something that possessed the air of being marvelous.

In 1822 homœopathic societies, journals and hospitals were established. The publication of his work on chronic diseases in 1828, in which he first promulgated his psora theory, led to a *division in his own camp. This is readily understood* when we find in this work the statement of the futility of his previous treatment of chronic diseases; *admitting as he does, "that the beginning* of the homœopathic treatment of these diseases was cheering, the continuance less favorable, but the termination has proven entirely hopeless."

Having lost faith in their leader, some went a step further, and so we find Hermann advocating instead of homœopathy isopathy. It was claimed that when certain organs were diseased it was necessary to give the invalid the corresponding organs of a healthy animal. Therefore fox liver was given for liver disease, fox lung for lung disease and fox brain for brain disease.

Soon we find Gross and Lux considering it necessary to give these organs in an extremely diluted dose, and finally the most repulsive absurdities grew into practice. Blood was given for blood diseases, the sputum of phthisis to consumptives, teeth to those whose own had become carious, and even worms to those afflicted with helminthiasis. Revolting as this may be, we will soon see that this practice has not entirely disappeared.

Recognizing the need of further reform in homœopathic therapeutics, Grüner and Honigsberger suggested larger doses. Kurz, Ott, Rapon and Barth introduced hydro therapeutics. Then came the advocates of gymnastics, mesmerism and animal magnetism. The mysticism surrounding homœopathy found in the latter a wonderful adjunct. But homœopathy received *no support* from these innovations, for while on the one hand, they exposed her shortcomings on the other, it was extremely doubtful, to say the least, whether their plan of action was based upon the "similar" doctrine.

But as with advancing years investigations in the *field of rational scientific medicine developed* pathology and physiology, it became apparent, that the ethereal dynamic conception of disease must be receded from by the homœopathic practitioners.

About 1850 Griessellich appeared in the van of homœopathy, and he was followed by Arnold and finally by Hirschel, who *in 1854 published* "A Sketch of Homœopathy from its new stand-point." *The claim was then put forth that modern* homœopathy is materially different from what Hahnemann taught, and that accepting and *standing upon the great medical advances of the* the day, it should be regarded as scientific. They received the results of scientific investigation and substituted for mere symptomatic expression the pathological changes in the organs, as the essential feature of diseased processes.

Hahnemann's conception of disease was therewith abandoned but the law of similars was still maintained. And now we find asserted as the modern conception of homœopathy by W. Stens, Jr., Griessellich, W. Sorge and Gutwill: That there are certain classes of medicines which affect a number of organs and tissues, influencing their action; and that they are to be prescribed for the diseased organs which they are presumed to alter. But despite the wealth of their therapeutic armamentarium, no homœopath has yet shown that any drug was able to excite a pneumonia, an emphysema, a collection of water or pus in any cavity of the body, or that any liver, heart or kidney disease has ever been awakened in a previously healthy man by the administration of a homœopathic remedy.

It has been claimed for certain specific drugs that they do produce pathological conditions similar to those for which they are prescribed. Thus mercury has been known to awaken a diarrhœa, and, again, mercury and constitutional syphilis sometimes act alike. But what of the dose? Will any one pretend to say that the persistent or appreciable administration of a drug, perhaps in even poisonous doses, is to be followed by the same effects as when it is given in a millionth, or worse still, in a decillionth part? More than this, can it be said that the pathological changes in diarrhœa and those following mercurial poisoning are identical?

The recent efforts of homœopathy to reconcile the positive findings of the pathologist with their views have proven more futile than was the case in the early days of Hahnemann when speculation was, if not legitimate, yet the quite universal practice. As to the proving of their remedies upon healthy individuals, the methods pursued are to-day identically the same as those of old. Baer's work on digitalis, which, to quote a homœopathic writer, is to be regarded as "unquestionably the best and most scientific work" of its kind. In it, among other symptoms, he records a sharp nasal catarrh occurring ten days after taking the last dose; accompanied with a pain in the head and arms; and, as the last effects, dull pains in the chest and sharp fleeting pains in the head seventeen days after discontinuance of the drug. Clotar Miller, in a popular work on medicine from the homœopathic standpoint, describes in his chapter on diseases of the mouth, fifty remedies, the selection of which hinges upon the alteration of taste and in the coating of the tongue. His chapter on cough and toothache indicate that a remarkably fine acumen is necessary to discern their special character and the choice of the suitable remedy. Then follows a list of specifics for the cure of hernia, caries, tumors, including carcinoma, and like Hahnemann prescribes a different line of treatment for the psychical diseases as they are caused by fright or fear, hate, love or jealousy; or may be announced by a shriek, oaths or curses; or yet again find their expression in absent-mindedness, talkativeness, laughter or tears.

One of the most remarkable of recent literary productions is the address of Lutze, which was delivered at the Hahnemann memorial services in 1872, and which has reached its forty-second edition. It appears that a man æt. 72 was cured of persistent vomiting by giving him a glass of water which the writer had magnetized by holding it in his right hand. From which he concludes "that if pure water can be so enriched in medicinal virtue by simple contact with the hand as to cure a disease of years' duration, how much more must this power grow if a properly diluted drug, whose peculiar powers experience and provings have taught, be subjected to constant shaking in the hand, until it becomes enormously efficient." Further he says: "The poisonous properties are removed from a drug through its dilution, while its special peculiarities, so to speak its soul, remains and by rubbing and shaking becomes vivified and strengthened by human magnetism."

Stens, Jr., Grauvogl and Heinigke argue that the intensity of a drug affection is not dependent upon its quantity, but upon the extent of surface to which it is exposed, and hence is increased by its trituration.

Heinigke proposes the remarkable explanation that the atomization or molecular fission, as he sees fit to call it, is the essential thing which frees the given drug of the laws which govern it during the period of its affinity. And therefore he argues, and this in 1871 in his "Principles of Homœopathy," that drugs become specifics only after they attain free molecular form, while in the state of their chemical affinity they have only chemical effects.

Grauvogl (1870), returns to the old teaching of Hahnemann, for, asks he, "Has any chemist weighed the quantity of atmospheric air required to be inspired, necessary to produce cholerine, cholera or typhus, how much miasma until intermittent is produced? As it cannot be established that the severity of disease is dependent upon the quantity of *materies morbi* introduced, therefore it is much more absurd to maintain that the quantity of medicine administered is to regulate the effect desired to be secured."

These are quotations from recent homœopathic literature, and yet they tell us that modern homœopathy is quite a different article from that offered by Hahnemann. If this be so, *I have* failed to discern the difference.

Even isopathy has been regenerated. I have in my possession a "catalogue of morbific products, nosodes, and other remedies, in high potencies, by Samuel Swan, M.D., 1886," which any of you may obtain by writing for it to 13 West 38th St., New York City. It bears the famous insignia, "*similia similibus curantur*," and the mystic words, "simplex simile minimum." It is furthermore stated in italics: "Morbific matter will cure the disease which produced it, if given in a high potency, even to the person from whom it was obtained." It is at once the most remarkable and most revolting, the most incredible and infamous production, that has ever been launched upon a suffering community. It contains a list of about 1,000 pills, which includes a group which would readily awaken, perhaps, a cynical smile from the unbeliever. Such as pills containing alcohol, aqua pura, Buffalo lithia, electricitas, ether, ice, "tears of a young girl in great grief and suffering," magnet moonlight, and finally, those made "from a silk handkerchief eaten by a cow and taken from the stomach in a hard ball, during the three years she never had a calf."

All this might do very well and be regarded as a great joke, were it not for the far greater list of such revolting matter as: renal albumen, lice insect, renal calculus, kidney of Bright's, carbuncle pus, condylomata, diabetic sugar, diphtherine, otorrhœa syphilitica, body and head lice, pus from caries, rectal abscess, cancer of uterus, breast, pylorus and face, syphilinum, tinea syphilitica from a patient with tinea capitis, "menstrual blood from a woman with warts," vomit from a yellow fever patient, and so on.

Think of administering such vile excrementitious and pathological products under the name of medicine, under the cover of practicing the healing art, and if the thought is not revolting, if the possibilities to which these homœopathic notions, if followed to their legitimate conclusions, can bring us, is not appalling, then there is nothing frightful in nature.

Perhaps, however, no more truthful picture can be seen of homœopathy, both in what she pretends to be to day and what in reality she is, than can be drawn from the report of the annual meeting of the New York Homœopathic County Society held on January 9, 1890.

The President, in his address, makes several assertions which history will hardly warrant. Amongst other statements he says: "Since all other means have failed to destroy homœopathy, its opponents have now raised the cry that it is sectarian. . . . . But this, like all past attempts to injure this school, is doomed to the same inevitable failure. . . . . For sectarianism in the beginning was forced upon homœopathy. If when the law of *similia* was first promulgated by Hahnemann, it had been accepted by the profession as one law of cure, even of little importance, it would have advanced the therapeutics of the old school many years, but would have prevented the formation of a sectarian school. . . . . Shall we then, at the dictum of the old school and the few discontents in our ranks, tear down the bridge which has carried us safely over? . . . . The time has not come for this. When the dominant school of medicine accepts the law of *similia* as one of the laws of cure; when the principles of homœopathy are taught with others in their colleges; when homœopathic physicians and surgeons are admitted upon an equal footing in their societies and given the same recognition in their hospitals and public institutions; when the ban which has been laid upon all followers of Hahnemann has been removed—then, and not until then, can we afford to give up our distinctive title. They who first forced us into sectarianism must give us a more cordial invitation to return to the fold before we can with honor accept."

In our review of the Organon and its principles to-night has there appeared a single claim to this position? Hahnemann himself was the one to proclaim that the doctrine of similars was an exclusive, a sectarian dogma. It was he who maintained that it alone was the correct principle of practice, and through its application only could cures be effected. He not only did not desire that it should be recognized as "one law of cure, even of little importance," but he insisted that it was the law of cure of all importance. He recognized no other plan of treatment, and the manner in which he assailed and abused those who decidedly opposed him, the titles of "renegade" and "mongrel" he applied to his followers who prescribed the tenth and not the thirtieth potency, indicate only too well how utterly untenable is the position of Dr. Norton. What claims has homœopathy to recognition by the "dominant school?" During the one hundred years that have passed since Hahnemann wrote his first dissertation upon homœopathy, not one single scientific fact, not one single medical or surgical truth has been added to our professional knowledge by the homœopathic practitioners.

Its struggle has been one for existence. It has pursued a defensive and not a progressive policy. Those who at heart are homœopathic practitioners must stand upon the same ground as did Hahnemann at the beginning of this century. As is apparent in the recent homœopathic works I have quoted, homœopathy to-day is in its fundamental thought the same obscure mysticism—the teaching of the immaterial nature of disease and its causes and the interpretation of the mystic and dynamic action of remedies.

If homœopathy in this sense does not exist, then most certainly it does not in any other. How true this latter sentence is, is answered by the further report of this same meeting of the New York Homœopathic Society.

Following the President's address was a paper by Dr. J. W. Dowling, Professor of Clinical Medicine and Diseases of the Heart and Lungs at the New York Homœopathic Medical College, on "La Grippe." He asserts that the germ theory furnishes the only plausible explanation of the origin of the disease. He draws the line between croupous and catarrhal pneumonia. He explains the increased death-rate of croupous pneumonia to be due not directly to the prevailing epidemic influence, but to the "specific organic poison" that develops croupous or lobar pneumonia and nothing else. The system may be run down by influenza, and brought so far below the ordinary level of health, that the germs of croupous pneumonia now become active and develop their peculiar disease. The same, he says, may be said of malarial illness, of typhoid fever or any infectious disease. The case, he argues, is different with catarrhal pneumonia, which he says is always preceded by a bronchitis, and owes its cause to an extension of the inflammation from the lining of the minute bronchial tubes, and so he goes on.

Truly this is the kind of homœopathy that Hahnemann did *not* teach. Then followed a discussion upon the treatment. The most diversified views were presented, and amongst them one practitioner advocated 20 gr. doses of baptisia, which another insisted was not homœopathic, while a third, *mirabile dictu*, admitted that he was using antipyrin in 10 gr. doses.

As a matter of fact Dr. Guernsey, one of the foremost of the so-called homœopathists in New York, is no doubt correct in saying, that there is to-day no exclusively homœopathic practitioner in New York City.

It is not my intention at this late hour to read a panegyric of the work performed during the life period of homœopathy, in the field of scientific medicine. Advancing from the eighteenth to the nineteenth century, she stepped as it were into a new life. Emancipating herself from the chains of speculation, there opened before her an era of real study and observation. No mere statement of symptoms, real or fancied, from the lips of some enthusiastic, imaginative, or yet even earnest physician or, worse still, some neurotic or illiterate patient. But there came a time of earnest, hard study. The French school led by their progressive Bichat, who made in a single winter 700 autopsies, and who, though forced to succumb to phthisis in his 31st year, had lived, in those few years, a life so useful that he impressed himself upon medical history for all time. Here was laid the foundation of real medicine. No longer could disease be presumed to be a myth. New methods of study were introduced. Percussion, announced to the profession by Auenbrugger, was given a permanent place by Corvisart, whose student Lænnec enriched the art of physical diagnosis by the discovery of auscultation. The French school was reinforced in their efforts by the one in Vienna, and Rokitansky and Skoda completed the establishment of realistic medicine. New methods of clinical study were introduced; urinary analysis was undertaken, the clinical thermometer told and foretold the course of febrile affections, and the most careful methods of diagnosis were made possible as the true nature of disease was unfolded. Physiology taught us the manner in which we live and gave a more material explanation of our existence than was presumed to be its cause, when "dynamis" ruled supreme. The germ theory of infectious diseases, first advanced in 1836 by Latour, found careful students and cleared away the mysticism enshrouding these affections, which were so inexplicable to Hahnemann, until now, with the light shed by the labors of Koch, we understand more thoroughly the means of their production. Chemistry, which during our century has grown to be a recognized science, has joined hands with microscopy, and to-day there can be isolated not only the pathogenic microörganisms but those infectious chemical poisons, the ptomaines. On every side scientific medicine has steadily progressed, and with each advancing step has dealt a death blow to the pretensions that disease is an immaterial, spiritual manifestation.

Facts and discoveries accumulated so rapidly that no single individual could master them all. Special fields of study were entered upon, and soon unheard of realms were being explored. Gynecology, ophthalmology, laryngology, dermatology and diseases of the nervous system, were all substantially unknown until the present century.

It is said that homœopathy has greatly advanced the study of the physiological action of drugs. The medical literature of the close of the last century teems with the productions of this sort. Koeppe in his *brochure* referred to presents a list of works, showing that before the era of Hahnemann studies of this character were by no means rare. But who will say that the records of the Hahnemannian kind, made in the most unscientific manner and through the most ignorant agencies, based upon presumptions which medical progress laughs to scorn, have been of any real service to physiological medicine? Look to the text-books. Does Brunton or Wood make the first suggestion of any fact homœopathy has ever adduced?

And what shall we say of surgery, that not only kept pace in its pathology, but which has taught us how to render the sufferer unconscious while severe operative procedures are undertaken; has, guided by unerring progress, with a certainty born of positive knowledge, dared to invade the most sacred cavities of the body and remove existing disease? Where can we read a more conclusive argument against the immaterial dynamic nature of disease, than in that chapter unfolded by Lister on antiseptic and aseptic surgery?

But I must close.

If in the medical history of this century, one fact stands out more prominently than does another, it is that the age of dogmas, of systems, of speculation, is passed, and that medical science, broad and progressive, cannot be compressed into the narrow confines of any creed.

And now we are told that the name "homœopathy" should be changed and that of the "new school" adopted.

For a school that was the exponent of a mystic, ethereal idea, whose absurdity has long ago been proven; for a school existing for a whole century, in the midst of tremendous advancement in every department of learning and science, which throughout its whole existence has not added a single truth, but which has decade after decade been made to realize the growth of scientific medicine and admit its own folly; for such a school to now claim the title of "new" is indeed presumptious. Which is the new school? the one that stands as the last representative of the mystic systems of the eighteenth century, or the one that is broad and progressive as knowledge itself?

Let history answer.

ORIGINAL ARTICLES.

CASUISTRY IN OBSTETRICS.

Read in the Section of Obstetrics and Diseases of Women, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

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Casuistry is a word much less used now than formerly; but though the times change and we with them, the idea that the word expresses abides, and will continue as long as the race. Nay more, as the relations of human beings become more complex, and as the boundaries of science are extended, so the sphere of duty grows, and questions as to human conduct multiply, and often are more difficult of answer.

The word casuist was more especially applied to theologians occupied in resolving questions of conscience, and the famous order of Jesuits has probably stood most prominent some centuries in giving special study to casuistry. The disrepute into which the words have fallen has been attributed to Protestant revolt against alleged religious abuse of casuistry and of the office of casuist. It should, however, be remembered that before the Catholic church sought to give light to its suppliants in doubtful problems of duty, Cicero, as Voltaire has remarked, discussed in his *De Officiis*, some of the most difficult questions, and that long before him Zoroaster gave as one of the best guides in making human conduct correspond with the claims of conscience, this maxim: "In doubt as to whether an action is right or wrong, abstain."

Admirable as Zoroaster's rule is, it may fail of adaptation in many of life's emergencies, and its light go out, leaving us in the darkness. Not to resolve may be to resolve; we may be compelled to do one of several things, being unable to fold our arms and reject all, because we do not know which is best. This is true in obstetric practice quite as much as in any of the departments of medicine.

One of the most eminent of Scotch moralists and metaphysicians, Reid, wrote as follows: "There are some intricate cases in morals which admit of disputation; but these seldom occur in practice, and, when they do, the learned disputant has no great advantage, for the unlearned man who uses the best means in his power to know his duty, and acts according to his knowledge, is inculpable in the sight of God and man. He may err, but he is not guilty of immorality." Here the writer admits that questions of casuistry do occur, and he also claims that if one does wrong after faithfully seeking to find out what is right, he is blameless; a conclusion that does not correspond with the generally received axiom, "ignorance of the law excuseth no man."

Let no one imagine that casuistry seeks evasion of the law, the compliance with its letter while its spirit is violated; and that the dominion of right is set at naught by quirks and quibbles such as lawyers sometimes use to secure the escape of the guilty. Undoubtedly men and women have made it a cloak with which they have sought to hide the nakedness of crime, as for instance, a wife who excused her adultery on the ground that while she resigned her body to her lover, her lips with which she had made vows of fidelity to her husband, were not touched. But such or any perversion of casuistry cannot weaken its power, or destroy its necessity. That necessity, as De Quincey has said, can be deduced from the very origin and genesis of the word; it is from *casus*, a case, and is really the science of cases. "After morality has done its very utmost in clearing up the grounds upon which it rests its decisions—after it has multiplied its rules to any possible point of circumstantiality—there will always continue to arise cases without end, in the shifting combinations of human action, about which a question will remain whether they do or do not fall under any of the rules. And the best way for seeing this truth illustrated on a broad scale, the shortest and most decisive is—to point our attention to one striking fact—viz.: that all law, as it exists in every civilized land, is nothing but casuistry." The enactment of laws, their enforcement, and the trial of civil and criminal causes, furnish at once proofs and illustrations of casuistry. Science is perpetually propounding new questions in casuistry, or demanding new answers to old ones. And this is true in medicine. Another truth is this: in medicine the elements of time and place are often concerned in the responses to casuistical questions.

Writers of systematic works upon moral philosophy have quite frequently presented questions in casuistry. Among those which Kant propounded but left unanswered, were two at least which belong to medicine. The first was, "If a man has been bitten by a mad dog, and recognizes the symptoms of hydrophobia, ought he not to destroy his life, lest when the disease is fully established, he may injure others?" The second question was this: "The propagation of the species being Nature's object in cohabitation, ought this to take place when the purpose is impossible, as in pregnancy?" The latter question, as well as the more important one which from time to time is so often made matter of professional discussion, "May sexual intercourse occur and nature's purpose be thwarted by either party?" belongs to the casuistry of obstetrics.

It certainly is discouraging to one who seeks a universal and immutable foundation for morals, and therefore immutable and universal laws for the government of human conduct, to find the same question differently decided in different ages and by different peoples. When the elder Cato was asked what he thought of usury, his reply was, "What do I think of murder!" But to-day the most enlightened people regard usury as just and right. Pascal's words were an exaggeration, but no one can deny their expressing partial truth: "In the just and the unjust we find hardly any thing which does not change its character in changing its climate. The degree of the elevation of the poles reverses the whole of jurisprudence. A meridian is decisive of the truth, and a few years of possession. Fundamental laws change. Right has its epochs. A pleasant justice which a river or mountain limits. Truth on this side the Pyrenees, error on the other." Obstetric art presents at least approximate illustrations of some of the points referred to by the great French philosopher. When gastro elytrotomy was revived by Dr. Thomas, and at the outset gave promise of brilliant success, the wise veteran obstetrician, Fordyce Barker, publicly remarked that if the value of the operation were established the subject of obstetric ethics must be re-studied. Outside of the United States the operation is scarcely known in practice, and one of the greatest of European obstetricians, Winckel, has recently said that it has no future. Porro's operation belongs almost exclusively to Italy, as also symphysiotomy, though the recent declaration of Mr. Tait in favor of the former will give it a wider acceptance. The recent successes of that operation and of Cæsarean section open questions which our fathers believed were settled.

The treatment of ectopic gestation in its early period is one of the pressing questions of the hour. In this country faradism has the support of some of the most eminent in the profession, while abroad it meets with hardly any favor; on the other hand, there are in Europe some distinguished authorities who advocate and practice injection of morphia into the ovum, a treatment never employed in this country.

The progress of science offers new questions in casuistry to the obstetrician. In illustration, the ophthalmologist discovers albuminuric retinitis in a pregnant woman, and announces to the obstetrician that her continued pregnancy is at the peril of her vision, possibly of her life. What answer is the latter to make, what conduct pursue? This question will be considered in the course of the paper; its present introduction was only to illustrate, as was stated, the fact that progress in science inevitably originates new problems in practice.

Passing from these references to time and place, and the advance of science in their relation to casuistry, permit me now very briefly to consider some of the questions that may be presented the obstetrician as a casuist. Let us take first that propounded by Kant, as to cohabitation in pregnancy. I have more than once made earnest protest against this indulgence as injurious to the pregnant woman in many instances physically, as often repulsive or odious to her, and then and thus an injury to her moral nature; it is neither needed nor desired by her, and it has its origin, not in exalting love, but in degrading lust. Marital continence purchased by a wife's indifference, aversion, suffering, possibly peril to her own life, or that of her unborn offspring, is held by a mere rope of sand, and the first strong wave of passion may forever sweep it to ruin. It ought to be impressed upon man that woman when pregnant should surely be treated as well as animals in a similar condition are, and that continence for months, or even for years, is a possibility and no injury.

Means to prevent conception in married life are asked of the physician. Admitting his knowledge of such means, means that though intercourse takes place are certain to prevent its legitimate result, can he inform married men and women? Laws are frequently so made that much is conceded to human weakness, the standard of legal enactment not formed for perfect beings, but brought down to the level of the intellectual and moral development of its subjects. Even Divine law has stooped to the moral imperfection of man, for did not the great Teacher assert to the Jews that the conditions of divorce were lowered by Moses on account of the hardness of their hearts?

Moreover, let it be recognized that frequent childbearing is in some causing rapidly failing health and strength; that children come faster than the means to properly care for them is acquired; that infants are born with feeble organization, or tainted with hereditary disease, and as time goes on they may prove to be defective in mental power, or of bad moral character, so that one involuntarily says, better they were dead than living, or better they had never been born.

Nevertheless, all the condescension of law acknowledged, and these conditions of fact admitted, and even though we may not believe that the back is always given strength for the burden it must bear, or the wind tempered to the shorn lamb, the physician takes a great responsibility who endeavors to thwart Nature's law—*lex, lex dura, sed lex.* If there are instances in which the physician ought to impart such knowledge, they must be exceedingly rare, and the nicest casuistry is necessary. The consequence of this knowledge, while it may protect woman from danger, and society from harm, does not exalt, but degrades, man; he has no restraint upon his passion, while his conscience, reason and will are thus weakened; continence, the sure way of avoiding conception, is no evil to his body, and exercised for his wife's health and happiness, ennobles him, exalting his spiritual being. This may be the voice of one crying in the wilderness, but ultimately it will be heard and heeded.

The knowledge given in those cases in which it may seem to be necessary, will not be kept secret by the parties informed, but will be imparted to others who have no just excuse for avoidance of childbearing. It will become general, and thus a strong defence to female virtue is taken away, and the purity of countless lives and the peace of countless homes be sacrificed upon the altar of man's unhallowed lust.

I have no right to put into the hands of another a loaded pistol when there is a probability he will use it for suicide or homicide. We are morally responsible for imparting knowledge when we know it will be used for evil. The recognition of this law by Galen was commended by the illustrious Sir Thomas Browne, in his Pseudoxica Epidemica: "We commend the wisdom and goodness of Galen, who would not leave unto the world too subtle a theory of poisons; unarming thereby the malice of venomous spirits, whose ignorance must be contented with sublimate and arsenic."

The profession generally recognize the law that when pregnancy seriously imperils a woman's life, abortion is justifiable. But suppose the peril be not to life, only the integrity of an important organ is threatened; may the physician end the pregnancy? My friend and colleague, Dr. Wm. Thompson, informs me of his having been consulted some years ago in the case of a pregnant woman because of impaired vision. Upon examination he found albuminuric retinitis, and informed the family physician that longer continuance of the pregnancy would cause permanent injury. The pregnancy went to term, the mother becoming hopelessly blind. It is generally conceded by both ophthalmologists and obstetricians, that such condition of the eyes in a pregnant woman demands the induction of premature labor. Let us remember, however, that premature labor is a sort of compromise, for the infant mortality is very great; in one-third to one-half the cases we, by it, only succeed in preserving the child's life for a few days or a few weeks.[1] Bearing this fact in mind, are there not cases of albuminuric retinitis in pregnant women which justify, not merely consent but desire being expressed by the sufferer and her friends, the physician in ending the pregnancy even by procuring abortion?

Craniotomy upon the living fœtus has been for years the subject of much professional controversy. One of the most recent utterances upon the subject is by Mr. Tait, who after three successful cases of amputation of the pregnant uterus—the so-called Porro operation—having previously had four fatal cases of Cæsarean operation, one of them having been done seven years ago according to the method now claimed by Sänger as a new operation. The great Birmingham surgeon predicts that this amputation "will revolutionize the obstetric art, and in two years we shall hear no more of craniotomy and evisceration, for the new method will save more lives than these proceedings do, and it is far easier of performance." In a footnote he admits craniotomy for hydrocephalus. Destruction of the life of the fœtus may be necessary in other pathological conditions besides hydrocephalus; thus there may be ascites presenting delivery, or the child may be a monster.

Beside these cases, the practitioner may be called to one of neglected shoulder presentation, and the forerunners of uterine rupture are at hand; or to a case of face presentation, posterior rotation of the chin having occurred, and delivery impossible through the natural passage without the head is lessened. Uterine rupture may be threatened in simple pelvic narrowing, or from unusual size of the head, or from too advanced ossification of the cranial bones. Now the general rule of treatment accepted by obstetricians, is that in case there is imminent danger of rupture of the uterus, embryotomy is to be done at once. Some time since I was sent for to perform craniotomy, the mother having previously given birth to three or four living children, though the labors were long and difficult in consequence of some contraction of the pelvic inlet. But the child was living, the condition of the uterus normal, and the woman's strength good, and I declined to do the operation then, though the family were quite willing, rejecting the suggestion of a graver one, and left the patient with the gentlemen in attendance, one of them an obstetrician of skill and large experience. Eight hours afterwards I was sent for again, and found a woman dying from ruptured uterus; the physician recognizing the injury, had endeavored to deliver by podalic version, but the head could not be brought through the superior strait until craniotomy was done. Could that result have been foreseen, there was a time when the lessening of the fœtal skull, supposing the woman and her friends to have refused abdominal section, would have saved her life and been justifiable.

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[1] It is, however, highly probable, if not absolutely certain, that when the *couveuse* and *gavage* are more generally used in the case of feeble, prematurely born infants, mortality will much decrease.

Here I wish briefly to refer to a rarely occurring condition which involves one of the most painful, serious and difficult questions in casuistry. Three facts in illustration will be given. Thirty-nine years ago, when first coming to Philadelphia to attend medical lectures, my preceptor took me to the residence of one of the professors in the medical department of the university, a former fellow student of his. In the conversation that ensued between the two gentlemen this medical teacher narrated an obstetric case that he had just attended. The patient was the wife of his coachman, and had a deformed pelvis. The honored Professor of Obstetrics in the university, the late Dr. Hodge, was called, and, after performing craniotomy, delivered the child; but upon being born it cried vigorously, and the narrator said that he instantly took the crotchet and thrust it through the opening in the head into the medulla. A very eminent American obstetrician was called to a case of labor in which delay arising from rigidity of the os, the gentlemen in attendance had done craniotomy. By the advice of the consultant the woman was given morphia, and after a few hours' rest labor pains were efficient and the os readily yielded. Before the birth of the child, however, recognizing that it had survived the mutilating operation, he destroyed its life, those by whom he had been called in consultation consenting. I myself once performed craniotomy in a case in which I was assured by the physicians who had been in attendance several hours that the child was dead. The os was perfectly dilated, the presentation normal, but the head did not engage and uterine action almost ceased, the patient showing symptoms of exhaustion. Some minutes after the child was delivered it made a slight movement and emitted a faint sound. I took it into an adjoining room—no repetition of sound or movement; but that there might be no doubt I repeated what one of my honored teachers, long since in his grave, said he had done. I could think, in the emergency, of no other guidance. Let me repeat that this is one of the most painful, serious and difficult questions in the casuistry of obstetrics.

Those who justify craniotomy upon the living fœtus do not all agree as to the pelvic narrowing which forbids it, and renders abdominal section imperative. For example, a very distinguished British[2] obstetrician in a recent contribution to the subject states in one place that the conjugate must be two inches at least, possibly two inches and a quarter, to justify craniotomy, but elsewhere he distinctly states that he "would not hestitate to perform Cæsarean section upon a patient with a conjugate of two inches and a half, and of course under, feeling that her chance of survival would be just as good as after a difficult cephalotripsy." My own conviction is that the opinion expressed is right; only an expert in operating and with all facilities for operating, and when the operation is timely so far as the strength of the patient is concerned, is likely to save the mother's life when the conjugate descends to two inches, or near it. Thefore in the mother's interest abdominal section is indicated in such narrowing.

One portion of Dr. Phillip's interesting paper considers the degree of pelvic narrowing which is to be met by the induction of premature labor, and his conclusion is that this is indicated if the conjugate is two inches and three quarters to three inches. Thus it will be seen that comparing the less figure with the greater that he gives for the Cæsarean operation, two inches and three quarters with two and a half, this restricts craniotomy to one quarter of an inch—a limitation that is so near a victory in this field for those who condemn craniotomy upon the living fœtus, that final success seems almost attained. In the course of the paper referred to, the author presents a question in casuistry which is remarkable not in itself, but in the ambiguous answer given. Let there be two women, each having such pelvic deformity that a living child cannot be born, but delivery can be safely effected by craniotomy; one of them is poor, and cannot take suitable care of a child, and therefore does not desire one, while the other is in comfortable circumstances, and desires to have a living child. "The question then arises: Ought an obstetrician to be in any way guided by these maternal desires? A direct answer is necessarily difficult, and would vary in different cases. My own opinion is that provided they be consistent with the practitioner's course of procedure, they should not be passed over." One is reminded of the answer made by the Delphic oracle: "If Crœsus should make war upon the Persians, he will destroy a mighty empire." Encouraged by this reply he made war upon the Persians, and a mighty empire was destroyed, but it was the empire of Crœsus, not of Cyrus. If consistent with the practitioner's course of procedure these desires *should not* be passed over! One practitioner will perform craniotomy in both cases, and another abdominal section; the one procedure will respect the desires of one patient and the other those of the other patient.

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[2] Dr. Phillips, *British Medical Journal*, June 1, 1889.

Three recent successful Cæsarean operations in Philadelphia, one by Dr. Goodell, the second by Dr. Kelly, and the third by Dr. Anna Broomall, give promise that the future American statistics for this operation will be much more favorable than they have been. But just as in the past years one occasionally heard of a woman escaping ovariotomy by giving birth to a child, in defiance of the diagnosis, so now there will be instances of women who in their perversity disappoint Cæsareans by the same natural process. Yet errors of diagnosis and proposed treatment put aside, there can be no question that craniotomy is steadily having its field more and more restricted; nevertheless that it will entirely disappear unless for hydrocephalus, and that according to Mr. Tait's prediction in two years, few are sanguine enough to believe.

What ought we to tell a patient when election must be made between craniotomy and a Cæsarean section? Answering from Leopold's statistics, 8.6 per cent. perish, whereas only 2.8 per cent., or a little more than one fourth as many die after craniotomy. Theoretically all the children are saved by the Cæsarean operation, but Leopold's statistics show that 13 per cent. are lost. These are the facts from which her conclusion may be drawn, not urged, but only advised by the obstetrician as to which he believes the better. It is probable the majority of women will select that which is least perilous to their lives.

It is probable that amputation of the pregnant uterus is destined to occupy a more prominent place than it yet has, and it may be a large experience, and that of many, will confirm the position which Mr. Tait has assigned it. The simple method of performing it advised by him, will certainly commend it to all practitioners. He declares it "the easiest operation in abdominal surgery, and every country practitioner ought to be able and always ready to perform it. No special instruments are required—nothing but a knife, a piece of rubber drainage tube, two or three knitting needles, and a little perchloride of iron."

The future will soon answer the question as to whether hysterectomy or hysterotomy will save the larger number of patients, and have a mortality more nearly that of craniotomy; by that answer the obstetrician will have clearer guidance than he now has in one of the most important questions belonging to the casuistry of obstetrics.

INTUBATION IN ITALY.—The first intubation of the larynx for croup in Italy was recently performed by Dr. Egidi, of Naples, who still holds that tracheotomy is usually the preferable operation.

POLIOMYELITIS ANTERIOR ACUTA.

Read in the Section of the Diseases of Children at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY S. P. DEAHOFE, M.D.,
OF POTSDAM, OHIO.

When I received a letter from your President inviting me to write a paper for this Section I was at a loss for a subject to write upon. A short time after, while sitting in my office, a little boy came limping into the room; his atrophied leg with marked talipes valgus at once attracted my notice and suggested a subject. Although a difficult one to write upon on account of my limited experience with the disease, five cases only having fallen under my personal observation, it has been an exceedingly interesting as well as a painful one, and if I can say anything that will call forth a discussion that will throw more light on the nature and treatment of this malady I shall feel myself doubly repaid. I refer to poliomyelitis anterior acuta or infantile paralysis as it is commonly called. I shall confine myself to a consideration of the disease as found in early life, recognizing at the same time that the disease is encountered up to sixty years of age.

Poliomyelitis anterior acuta, as the name implies, is an acute inflammatory affection of the anterior cornua of the gray matter of the cord, the ganglion cells probably being the starting point. As yet there is very little known concerning the etiology proper other than it is to be found during the first three years of life. Various causes have been assigned such as cold, dentition, summer heat, acute febrile affections, the exanthemata, traumatism and a specific agent as yet an unknown member of the pathogenic bacteria.

Cold, as well as dentition and summer heat must be assigned as doubtful causes. Cold certainly can no more act as a causal agent than it does in rheumatism and pneumonia. A causative relation is supposed to exist between the affection and the exanthemata owing to its frequent occurrence during convalescence from them.

Loomis classifies traumatisms with the doubtful causes, but Jacobi says they have a more decided influence than is generally assigned to them. As to a specific microbe being the cause, nothing definite is known but the theory, to me, seems plausible. That a specific germ may gain entrance to and affect the motor regions of the cord is not impossible. Hydrophobia and tetanus are examples of the predilection exhibited for the motor regions by some specific infecting agent.

That the influence of heredity cannot be traced is an important negative fact.

Important changes are found by the aid of the microscope in the anterior horns of gray matter in the cervical and dorso-lumbar enlargements, consisting of an inflammatory softening. In the early stage all the changes of acute interstitial inflammation will be seen.

Later new connective tissue is developed and a sclerotic process is established, the multipolar ganglion cells have wasted and many have disappeared while those remaining are in various stages of degeneration, some have lost their processes and remain as irregular spherical masses of pigment. Whether poliomyelitis anterior acuta is an interstitial or a parenchymatous inflammation, the most careful microscopical examination fails to decide. The majority favor the view that the starting point is in the ganglion cells. Hyperplasia of the neuroglia in the anterior columns results in more or less atrophy of the nerve fibres. The anterior nerve roots are thin, atrophied and translucent and more or less degeneration takes place in the filaments of the peripheral nerves. The muscles which are implicated undergo serious alterations which consist in fibroid changes and atrophy; sometimes they undergo fatty degeneration. The bones of the paralyzed members are retarded in development and the tendons become atrophied. Important changes occur in the joints; the ligaments are relaxed, the articular surfaces atrophied and the articulations relaxed by reason of which great deformities are produced.

The usual onset of the disease is a fever which lasts two or three days or even more, but it may begin abruptly; the child goes to bed in the evening perfectly well, sleeps quietly through the night and awakens in the morning paralyzed. The fever may be accompanied with headache, backache, pain in the extremities, vertigo and even convulsions; or there may be merely nausea and vomiting. The paralysis is almost always at its maximum when first discovered. Most frequently the muscles of one or both lower extremities are affected; according to Duchenne, the right more frequently than the left, in the proportion of twenty-five to seven. Other observers have noticed it more frequently of the left. Four out of my five cases were of the right lower extremity. Sensibility is not affected.

The bladder may participate in the paralysis, and the urine be retained, as in my first case, or there may be incontinence; but the bladder is not permanently affected. Smith says: "The bladder and lower bowels remain unaffected, since only the muscles of volition are involved;" but as will be noticed in the history of my first case, the bladder is sometimes affected.

The tendon and other reflexes of the paralyzed parts are lost and the electro-contractility to the Faradic current is abolished. The temperature of the affected parts falls below normal, the parts being cold to the touch.

The number of muscles paralyzed varies in different cases. Only a single muscle or group of muscles may be affected, again both extensor and flexor muscles of one or more limbs may be affected. The single muscle most frequently affected is the extensor longus digitorum, and the group most frequently affected is the extensors of the toes and the flexors of the foot.

The following is a typical case:

Case 1.—Aubrey D., aged two years and ten months. Previous to present sickness, which occurred in September, 1882, he was in perfect health, had never had any serious sickness, nor any recent injuries. His mother noticed that the child was not as playful as common, that he did not amuse himself, that he was inclined to sit, rather than run about playing with the other children. Upon urging the little fellow to go and play he replied that he could hardly walk.

My attention was then called to the child and upon examination I found his temperature 101°; no other symptoms presented themselves, and thinking that possibly it might be malaria, I gave the child some quinine.

The next day the child was no better, temperature 100° in the morning and 101° in the evening. He complained considerably of pain in his limbs when required to walk, which led me to think of rheumatism. Quinine was continued. Third day: child no better, temperature about the same as the day before, pains in the lower limbs increased especially in the region of the right hip. Not another symptom presented itself that I could perceive and I was at a loss for a diagnosis.

I saw the child at 9 P.M. and nothing further had developed. He slept well during the night, and next morning I saw the child early and lifted him from his bed myself, whereupon he cried loudly with pain in the right hip. I began a careful examination, and upon taking hold of the right foot I found it cold and limp. The diagnosis was clear and I found myself confronted by a disease which I felt that I could not do as much for as I would have liked.

The child could not move a muscle below the hip, and the entire limb was cold. There was retention of the urine, but this yielded to warm hip baths. The pain in the region of the hip gradually disappeared in three or four days. The child was kept at rest in the recumbent position; the hot douche to the spine, with artificial heat to the paralyzed limb constituted the treatment for the first week, after which he was given iron as a tonic with strychnine according to the formula of Prof. Hammond.

℞.—Strych. sulph . . . . gr. j.
Ferri pyrophos. . . . . ʒ ss.
Acidi phos. dil.. . . . . ʒ ss.
Syr. zingib. . . . . ℥ iijss.
M. S. twenty minims three times daily.

Friction to the paralyzed member, together with electricity was perseveringly employed; but unfortunately, through the advice of a distinguished medical gentleman, the induced current only was applied.

The flexors and extensors of the leg soon regained their power of motion and in about four weeks the patient was able to crawl about the room. The extensor proprius pollicis was the first muscle of the leg to regain partially the power of motion. Other muscles in turn gradually regained some power of motion, and in two months the little fellow began to try to walk.

The muscles of the leg and foot had become markedly atrophied, and to-day the ligaments of the knee and ankle are relaxed permitting hyperextension of the leg and considerable talipes valgus. The temperature of the limb still remains below the normal.

I will not trouble you with lengthy histories of my other cases; suffice it to say, that in

Case 2 the paralysis was noticed in the morning when the child, a boy of two years, was taken from his bed, having been apparently well when put to bed the evening before. The right lower extremity was paralyzed, and marked atrophy of the entire limb remains. The child walks fairly well. No deformity other than the atrophy.

Case 3.—A female, aged 18 months, was taken from the county infirmary by a lady who, thinking the trouble could be easily relieved, brought her to me. Here again the paralysis was of the right lower extremity, but only the flexors of the foot, and extensors of the toes were paralyzed. The onset is not known.

Case 4.—A female, aged 7 months when afflicted. Was brought to me for treatment some months after. The parents stated that the child had been sick, had had fever, and upon the recovery from the fever remained helpless. In this case both upper and lower extremities were paralyzed. Treatment was of no avail, and marked contractures with great deformities developed later on.

Case 5.—A female aged 2 years 6 months. After an attack of fever which lasted several days the parents noticed that their child could not use her right leg. My attention was called to the case, and I found paralysis of both flexor and extensor muscles of the foot and toes. Electricity with iron and strychnine constituted the chief treatment with a not very flattering result. The child is now able to run about but considerable atrophy and talipes varus remain.

The diagnosis ought to be, and doubtless with all of you is easy; but my observation is that many general practitioners are unable to differentiate it from other affections; for during my connection with my first case, a number of physicians saw the case with me and their diagnosis varied from worms and biliousness to rheumatism. I fancy I hear some one say, surely those physicians were very ignorant. Not so, for one of them was, and is to-day a professor in a medical college in good standing. If such men overlook the disease it may be well for us to notice some of the more important diagnostic points. In the first place it might be mistaken for paralysis of a temporary nature; here there will be no softening nor atrophy. There will be no change in electro-muscular contractility, and recovery may be expected in twenty to thirty days. Again it may be mistaken for rachitis, but here again there is no change in the electro-muscular contractility and there co-exists certain changes that cannot fail to determine the nature of the disease. In hemiplegia there will be loss of intelligence and speech, paralysis of one side of the face, strabismus, and generally dilated pupils, electrical contractility normal, absence of fever and muscular atrophy. In myelitis sensibility as well as motility is affected; genito-urinary complications and trophic disturbances such as acute bed sores, œdema of the paralyzed limbs and effusions into the joints are sufficient to differentiate it. Progressive muscular atrophy may usually be known by the age, the slowness of development, and in turn the affection of isolated groups of the muscles. Diphtheritic paralysis may be known by the previous history, by the paralysis of the soft palate, absence of atrophy, and preservation of Faradic reaction.

During the initial stage, before paralysis has occurred the treatment must be purely symptomatic, since a diagnosis is impossible. After paralysis has occurred, and the diagnosis is clear, the most important element in the treatment is rest in a recumbent position. In this I believe all authors agree, but in the further treatment there does not seem to be the harmony of opinion that might be desired. To prevent further destruction of the gray matter, Bartholow recommends quinia and belladonna; hot douche to the spine; the application of galvanism, inverse current, stabile, large volume and low intensity, together with rest. Althaus recommends hypodermatic injections of ergotin repeated once or twice daily. Hammond says ergot is the only medicine capable of cutting short the disease or limiting its lesions. Brown-Séquard praises the belladonna treatment. Loomis, in his third edition speaking of the treatment with ergot and belladonna says he has never obtained any positive results from their use. Simon advises cutaneous revulsives. Loomis says they are contra-indicated. Erb recommends central galvanization as an antiphlogistic remedy for the myelitis and places a large anode over the spine at the supposed seat of the lesion and the cathode over the abdomen. His method is intended as a sedative to the local inflammation. Loomis again says electricity is contra-indicated.

Allen Starr, in an article on "Electricity as a Therapeutic Agent," in the *Medical News*, March 30th, 1889, in speaking of the use of electricity in infantile paralysis says: "There may be an object in reducing congestion; but it is not certain that this can be accomplished for any length of time by electricity. After the acute stage is over, spontaneous recovery will occur in a greater or less degree in many cases. Is this aided by the application of electricity to the spinal cord? I have yet to be convinced that it is, though I admit that I still employ the agent in deference to the opinion of certain authorities." Further on he says "Experience does not confirm the statements of some text-books, and of those whose interests lie in the direction of its use."

Gowers says, "Electricity has been strongly advocated and largely used in the treatment of infantile paralysis, and there is reason to believe that it is useful, although its influence has been much exaggerated. In no sense is it a curative agent, and there is no evidence that its application to the spine is capable of increasing the degree or accelerating the course of the recovery of the nerve elements. Nor is it easy to obtain evidence of its influence over the muscles. If the wasting is rapid, this progresses in spite of daily and sedulous applications."

My experience with the agent corresponds with Erb, who remarks that "Its results are not precisely brilliant." Since the electro contractility to the Faradic current is abolished, it is useless to apply it, except to those muscles which are imperfectly paralyzed and the interrupted galvanic current should be used until the contractility returns sufficiently to react to the Faradic current when that should be used. But little benefit can be expected if the muscles have entirely lost their contractility. The utility of the Faradic current is a stimulus to muscles imperfectly paralyzed, but liable to degenerate from inaction and to take the place of the galvanic current when the contractility returns.

A valuable aid to electricity is strychnia, especially when given hypodermatically. It should not be thus given more than two or three times a week. In nearly every case tonics are indicated, such as iron, quinine, arsenic and phosphorus, and the formula of Hammond as given in the history of my first case is an excellent one.

DR. KING, of Chicago, had observed three cases in adults during the last winter. In adults it was possible to elicit symptoms that could not be learned from children. Pain is a very prominent feature in adults; not so marked in children. Temporary paralysis of the bladder is always present but it quickly passes off, showing that the fibres to the detrusor muscles are not in the anterior horns but are affected by collateral hyperæmia. Tactile sensation was unaltered. Electricity is keenly felt by children and on this account this agent cannot be thoroughly used in the treatment.

DR. PETER HOOPER, of Philadelphia, said that in his experience electricity was useless. Hypodermic injections of strychnine and massage were best.

A CASE OF DRAINAGE OF PULMONARY CAVITY, WITH A RIB-CUTTER DEVISED FOR THE OPERATION.

Read in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY C. DENISON, M.D.,
OF DENVER, COL.

November 5, 1888, A. C. L., age 26, teacher, single, Cheshire, Conn., and Tilton, N. H.; father died of consumption at the age of 70, and the disease was prevalent on father's side.

The patient had left side pneumonia last April and was five weeks in bed. The attack commenced with a chill and the crisis came in six days. There was rusty sputum and probably some pleurisy complicating the pneumonia. According to the attending physician, Dr. W. C. Williams, of Cheshire, Conn., resolution was slow and the lung did not clear up well. There were no hæmorrhages, but he lost flesh and had night-sweats at times during the summer, and after his arrival in Colorado, which was five weeks ago, felt elevation by increased dyspnœa. Has had chills, afternoon hectic, and now expectorates profusely a yellowish-white sputum, he thinks one-half pint a day. He believes he has improved here, especially in appetite and digestion. Usual weight, 150; on arrival in Colorado, 125; height, 6 feet; spirometrical record now 120 cubic inches; pulse, 108; respiration, 28; temperature, 3 P.M., 100° F.; expansion, 31 and 32½ inches; emaciation considerable; depression is marked, and there is almost no movement on left side. Some air enters the left scapular and interscapular regions, but otherwise dulness predominates on that side. Slight "cracked metal" sound on stethoscopic percussion in the lower and posterior part of the axillary space. On the right side there is some broncho-vesicular breathing in the inframammary region.

Diagnosis: Pneumonic phthisis, third stage left, first (?) right. Gave treatment for night sweats and put the patient on Gardner's syrup hydroiodic acid and syr. hypophosphites comp. N. F.

Reëxamination January 14, 1889. Been in Denver, out on Humboldt street, in the outskirts of the city. Been constantly expectorating mornings; has gained in weight, now 138 lbs.; sleeps well and appetite good, but not so well for the last two weeks; bowels at times loose; coughs during the daytime, and has afternoon chills and hectic; pulse, 110; respiration, 40; temperature, 101⅓°, 2 P.M., and expansion 31 and 32⅓ inches; left lung sinking in size; moist crackles left infrascapular, absence of respiratory murmur left lower axillary space; cavernous breathing apparently superficial left infrascapular, with "cracked metal" sound, showing excavation near the surface. Advised permanent opening and prescribed creosote and use of Cutler's carbolate of iodine inhaler.

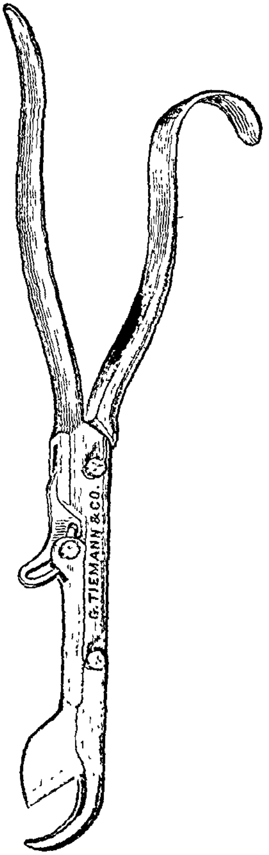
January 22.—Symptoms of progressive softening continue. His people have consented to the proposed operation. Resected the sixth and seventh ribs; entered the cavity, which discharged about four ounces of pus. Introduced a rubber tube, which was 4½ inches long, after trying a shorter one, which was inefficient. Through this tube half an ounce or more of a 5 per cent. solution of salol in liquid vaseline was injected twice a day. In less than two weeks the patient, who had lately ceased to cough and raise, was able to attend to himself, in cleansing the cavity antiseptically and injecting the salol solution, which had been increased to a 10 per cent. solution.

March 16.—Pulse, 92; respiration, 28; temperature, 4 P.M., 98⅔° F.; weight, 138½, which after the operation was only 125 lbs.; spirometrical record, 118 cubic inches; looks much better; expansion, 31½ and 33 inches, almost wholly on right; measurement of left, 15, right, 17 inches; right side much improved. The cavity is apparently the size of half an orange and surrounded with a fibrous deposit. Cut one inch from inner end of the tube. Appetite good; bowels regular; has no fever and sleeps well; does not cough, and expectoration has ceased since the operation; washes out the cavity once a day and injects the salol and vaseline; the discharge continually decreasing, and he has had no back-set.

April 20.—No fever; air evidently enters the lung back of the cavity, as there is a faint respiratory murmur over the posterior and upper part of the left lower lobe and underneath the left scapula. Apparent size of the excavation is 3x1½ inches, reaching from the inner part of the left infraclavicular region downwards and outward toward the left nipple, lying underneath the anterior wall of the chest, though detected through the posterior wall. Discharge about one ounce each twenty-four hours.

Reëxamination, Denver, May 10.—Been in Denver, and doing very well. Is going to Salida, Col., to take a clerkship in a hotel for the summer, and is now to have a new tube inserted. Weight, 140; gain, 15 lbs.; appetite, sleep and digestion in good condition; no discomfort from the tube in left side; injects the 10 per cent. solution of salol once a day; the discharge is mucopurulent and inodorous, between one-half and one ounce in each twenty-four hours; pulse, 76; respiration, 24; temperature, 10 A.M., 98⅓° F. The tube removed was 3½ inches long, and the new one 3⅓ inches, and the distance from the axilla to the inner side of the cavity, measured through the tube, is 4 inches or over. The cavity reaches from the clavicle above, along the side of the sternum downward and outward to the third interspace lying along the front of the chest, an average of 1¼x3½ inches in size. The tube lies in the bottom of the cavity, and the air enters the lung around the same toward the outer part of the left infraclavicular, and the whole of the scapular region and around behind toward the axillary region. Apex beat is within and 1 inch below left nipple. Expansion, 31½ and 33¼ inches; no râles. His looks are in harmony with his great improvement.

May 25.—Writes from Salida that the altitude (over 7,000 feet) does not trouble him, and the discharge has decreased one-fourth. He says: "The cool, clear air makes me feel vigorous and strong, and from present indications I think I shall be all right during the summer."



The Rib Cutter.—In this operation of resection the advantage was apparent of having a bone-forceps which could be operated through a small external opening, and without having to use force to thrust in the blades to grasp the rib.

The contraction of the chest wall made the ribs overlap each other, in which position they were so firmly fixed that they were with difficulty grasped with the ordinary cutters. Besides, I consider it of much importance to separate the periosteum and remove the resected portions of bone before opening into the thoracic cavity.

Determining to have these requisites to success supplied, I devised the accompanying rib-cutter, which was first made by a young mechanic, H. Rauchfuss, of Denver, and afterward perfected like the accompanying cut by Tiemann & Co., New York.

It combines a bone-forceps with a periosteum separator, and by the toggle-joint, which crowds the knife down upon the latter, gives the operator power enough to make a clean square section of the rib without wrenching or injuring the adjacent parts. When one section is made the periosteum separator, turned a little so its edge will bear against the inner surface of the rib, can be crowded along the bone so as to free it from all attachment, and the second section made as desired; or this freeing process may be accomplished before any section whatever of the rib is made.

Then one or more other ribs may be treated in the same way if desired, the external wound (or wounds, if more than one external opening is made to resect several ribs) may be cleaned, and bleeding controlled. The cavity may then be entered at a selected point by thrusting a blunt-pointed instrument through the pleura and the lung periphery, the opening enlarged with the finger and the drainage tube inserted. In the case above cited the two pleural surfaces were supposed to be adherent, or the pulmonary connected with the pleural cavity. The external opening of the tube immediately after its insertion was stopped by absorbent cotton and vaseline, and only oozing allowed when expiration or a cough took place.[1]

The treatment which I commenced on the next day—injections with salol and liquid vaseline—was original so far as I know. Yet I have every reason to believe that my hopes for the method have been realized, as shown in this case, namely, that the antiseptic in this form would be unirritating; that some of it would remain in the pulmonary cavity; that the wound would be kept sweet and the healing promoted.

In another case operated on May 23d a resected portion of a rib 1¼ inches long was removed through an external opening of the same length.

GLAUCOMA FULMINANS, AFTER EXTRACTION OF CATARACT WITH IRIDECTOMY.

Read in the Section of Ophthalmology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY PETER D. KEYSER, M.D.,
PROFESSOR OF OPHTHALMOLOGY, MEDICO-CHIRURGICAL COLLEGE, PHILADELPHIA.

It is a well known fact that iridectomy is the sovereign remedy for glaucoma, and a few cases have been reported (I have had such cases myself), in which there has been a return of the symptoms necessitating a second iridectomy. But never have I seen or heard of cases like those I purpose detailing in this report.

On July 21, 1888, I operated on the left eye of Mrs. E. G., an English lady æt. 66, for the extraction of senile cataract. She was in good health, but of gouty diathesis—some gouty spasmodic cough at times. The lens was completely clouded. Position and projection perfect. She had never had any severe or acute attacks of gout, although at times she said she was rheumatic. The urine had shown some albumen the year previous, but under the efficient care of her physician, Dr. A. K. Minich, this had passed entirely away.

The operation was made with all antiseptic precautions. The instruments were washed in absolute alcohol; the eyelids and skin around washed with water and soap, then a solution of silico-fluoride of sodium, gr. ¼ ℥s. The latter solution was then instilled freely in the conjunctival sac, after which a 2 per cent. solution of cocaine was dropped in. Everything being ready, the incision of the cornea, upper section, was made, and a large iridectomy. There was no hæmorrhage of any kind from the iris or from the anterior part of the globe which extended into the anterior chamber. After opening the capsule the speculum was removed, and the lens delivered on gentle pressure over the lower lid. No vitreous was lost, and no cortical mass left in the eye. The whole operation passed off beautifully without pain or distress. She counted my fingers very promptly and saw the persons around.

The eye was again well washed with the silico-fluoride of sodium solution, a drop of atropia sulph. gr. ij ℥j instilled therein, to draw the iris away from the incision and prevent any anterior adhesion, and the bandage put on.

On the 22d, after a good night's rest, and twenty-four hours after the operation, the bandage was removed, the external parts of the eye washed with warm water and the eye itself with a solution of boric acid gr. x ℥j. By a candle light the eye was examined and found in good condition. No swelling or pain. The flannel bandage was removed and a Liebreich bandage put on, which was lighter and more comfortable.

On the 23d the eye was again washed the same as the day previous, and found remarkably well; vision was excellent. Permitted to sit up in her rocking-chair all day now. On the 24th still doing so well. On the 25th called to see her as usual and found her in splendid mood and condition, as there had been no pain or discomfort since the operation, and she was looking forward to the pleasure of again seeing. About an hour or two after I left her she was taken suddenly with an attack of very acute pain in the eye, extending up through the left half of the head. She had had no rest during the night, but thinking it would pass away, did not send for me, knowing that I would call the next day. When I called she was still suffering, and on removing the bandage I found the following condition of the eye: Pupil dilated, iris pushed forward towards the cornea, anterior chamber containing a large quantity of blood. Tension of the ball very great, + 3 to full extent. Vision reduced to the merest perception of light. All the appearances and symptoms of glaucoma fulminans. A solution of salicylate of eserine gr. ij ℥j was instilled into the eye, and repeated three times that day. It gave relief and the next day the hyperæmia began to break up.

This treatment was continued for two or three days in the hope that the blood would be absorbed so that I could make another iridectomy. But as the blood was taken up it was perceived that the iris was pushed directly against the cornea, leaving not the least anterior chamber. I was then obliged to wait, hoping eventually to be able to get room enough to pass a small v. Graefe knife through the cornea without catching the iris, and then remove a large piece of the latter. During these days she would suffer at times with attacks of pain in the head. The tension of the ball kept up. After the absorption of the blood the vision began to improve for a few days, but then dimmed again.

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[1] Since writing the above have devised and been experimenting with a valvular drainage-tube, which will allow the pus to come out but the air to enter. It seems to be a success. C. D., February, 1890.

It was not until fourteen days after the first attack, and under the constant instillation of the eserine solution, that I was able to make a good free iridectomy. This was done directly downwards, and at the same time lacerate the posterior capsule. The eye healed after this last operation very nicely, but developed very little vision; only light, especially when from the temporal side, and at times fingers could be seen. Sight seemed to improve for a while, then became less and less until it was almost nothing. I regretted that I could not make the iridectomy sooner, but it was utterly impossible to do so. I feel sure that if such an operation could have been done a few days after the attack, the sight would have been saved, as in the cases mentioned below.

It has been one of the phases of my professional life that, when I have a very interesting and uncommon case, within a year a similar one is sure to come under my observation, so on October 26 of the same year I removed a cataract from the left eye of Mr. James M., an English gentleman æt. 71. Position and projection was perfect. Right eye incipient cataract, but patient able to get around without assistance. Rheumatic, gouty diathesis, although then in excellent health. Urine free from albumen or sugar The operation was made just as the previous one and under the same antiseptic precautions. The capsule was found very tough. The lens came out on pressure, and the vitreous presented itself immediately after, but none came out of the incision.

October 27. All well. Eye washed with boric acid solution. No swelling or pain.

October 29. Eye did well until 1 A.M., when very severe pain set in, extending up into the head. The bandage was removed and applications of warm water made over the eye. When I saw him the pain was not so severe, but pupil was dilated, anterior chamber reduced, with a considerable hæmorrhage therein, and tension + 3. Otherwise eye looked well.

The case of Mrs. G. coming immediately to my mind, I determined to make an iridectomy as soon as possible, and as the blood in the anterior chamber was so much less than in her case, I felt I could do it in a day or two after the use of eserine. So on the second day after the instillation of a 2 gr. solution of eserine, finding the hyperæmia gone, I operated. The eye then gave very little trouble; tension reduced to normal and cure took place. After the eye was well the posterior capsule, which had become opaque, was drawn out with the hook.

On January 21, 1889, his vision was with + 9 D. $\bigcirc$ + 3.5 D. cyl. 165′ $6\frac{1}{12}$, and + 13 D. $\bigcirc$ + 3.5 D. cyl. 165′. He read 1.05 —.

Fortunately, in this case the anterior chamber was not so shallow as to prevent an iridectomy at an early day, the performing of which I am sure saved the eye from loss.

Another interesting case, although not reaching the fulminating form of those previously mentioned, but of well-marked symptoms of acute glaucoma, came before me in a hospital patient this year. Mrs. McG., 58 years old, well developed, rather stout and in good health. Right eye cataract—has been coming for the past three years. Position and projection perfect. Left eye, incipient cataract. Right eye extraction; upper iridectomy and lens removed on pressure without any mishap. Eye did remarkably well with excellent vision until the ninth day, when a sharp pain suddenly set in in the eye and head, vision became dimmed. I saw her soon after the attack and found the pupil somewhat dilated and iris pushed forward toward the cornea, with ball very hard. Tension + 3. Eserine solution gr. 4 ℥i was instilled at once, and a 2 gr. solution that evening and next day, when iridectomy was made. The pain was relieved on the instillation of the eserine and tension began to recede, but fearing a return on discontinuing the use of the eserine, the operation was performed.

Fourteen days after the last operation she was discharged with a good eye and vision + 10 D. = $\frac{6}{18}$.

In these three cases atropia gr. 2 ℥j was instilled once only, and then immediately after the operation. I have for a long while made it a rule to use the mydriatic at this time so as to remove the likelihood of the iris falling back into the incision in any way. In looking over the literature in relation to the development of glaucoma after the extraction of cataract with iridectomy, I am surprised to find so little in relation to it.

Bowman appears to be the first to call attention to it, for in the London Ophthalmic Hospital Reports, Vol. v, p. 1, he recites two cases in which there was great increase of tension after extraction of the lens and iridectomy. He says that it appeared to arise from an irritable condition of the nerves of secretion passing over into a paralytic state. Carter is the next to write of the glaucomatous condition which may arise after extraction with iridectomy, and recommends the incision of the posterior capsule.

These two are the only writers that I have seen so far who mention the occurrence of this condition, and in an experience of twenty-five years with large hospital service, these few cases are the *only ones which have* come to my notice. I have had many cases of iritis in different forms and at times subsequent to the operation of extraction, but never any developing of the marked glaucomatous symptoms and appearances as here related.

I regret exceedingly my inability to have been able to make the second iridectomy at an early date in the first case described, for I really think that then the vision could have been saved; but when the chance came, it was too late, the eye having suffered already too severely from the glaucomatous process.

The question would naturally arise, What could have been the cause of the sudden attack of glaucoma in such an aggravated form in these cases? Priestly Smith, who has studied the pathology of glaucoma very thoroughly, after consideration of the ideas of all the other writers, claims that an insufficient circumlental space predisposes the eye to glaucoma, and this insufficiency may depend upon: 1, the increasing size of the lens which comes with advancing years (Just here the query would come in, does not the eyeball reach its full growth and the lens its full size by 25 or 30 years of age?); 2, subnormal size of ball or of the ciliary zone, depending possibly on senile contraction—I would remark also here that most cases I have seen have been with full round eyes, and how about cases in young persons and children, that occasionally occur?—3, from the excessive size or prominence of the ciliary processes, which may be present at any time of life.

Among the exciting causes of primary glaucoma is congestion of the uveal tract which involves enlargement of the ciliary processes, which leads to compression of the infiltration angle. This may arise, as suggested by Bowman years ago, in a sudden paralytic action of the nerves of secretion causing an interference in the circulation, creating a morbid process in the ciliary processes throwing out an undue secretion into the vitreous, too rapid to pass from the vitreous into the aqueous chamber. Being thus impeded in the filtration process, a filling of the vitreous chamber takes place and a pressing forward occurs. This is seen by the advancement of the lens and iris toward the cornea accompanying the increase of tension. In the cases above described there was no insufficiency of circumlental space, as the lenses had been removed, but the posterior capsules remained intact attached to the zone of Zain, making a curtain, as it were, in front of the vitreous, which perhaps interfered with the free infiltration between the chambers. The escape of the fluid being retarded, the intraocular pressure naturally rises, the circulation in the ciliary processes becomes obstructed, swelling of the tissue takes place and an unusual condition of vascularity occurs; and in some cases hæmorrhage may emanate from an atheromatous condition.

It must be remembered that a single iridectomy in a glaucomatous eye does not always relieve it from the danger of a recurrence at some future day, and that another iridectomy would be necessary to save the eye.

I feel that more of such attacks of glaucoma after cataract extraction occur than we are aware of; that they have been overlooked, because not expected, and when developing have been classed as iritis.

In all cases of extraction of cataract, where there is a sudden interference in the regular and smooth course of healing, a careful examination of the tension should be made daily, and when any increase is found, instillation of eserine be made, and then, like Carter, I would recommend the rupture of the posterior capsule, preceded or accompanied as the case may be, in many instances by an iridectomy.

ANOTHER TWELVE MONTHS OF PERITONEAL SURGERY—FIFTY-SEVEN CASES.

BY HENRY T. BYFORD, M.D.,
PROFESSOR OF DISEASES OF WOMEN AT THE POST-GRADUATE MEDICAL SCHOOL OF CHICAGO, GYNECOLOGIST TO ST. LUKE'S HOSPITAL, SURGEON TO THE WOMAN'S HOSPITAL OF CHICAGO.

Having, at the annual meeting of the Chicago Gynecological Society, October, 1888, reported my peritoneal sections for the year ending June 30, 1888, I have thought it best to commence this report with July 1, 1888, in continuation with the old one.

MORTALITY.

Perhaps the most interesting subject for us to examine is the mortality, and our first inquiry will be, what kind of cases usually get well, and in what kind do most of the deaths occur? All abdominal sections in which there were no adhesions (sixteen *in number*) recovered. All vaginal sections (sixteen in number), with and without adhesions, got well, excepting one in which the death depended upon general conditions, viz: delirium tremens and its complications. In the series of forty-eight cases of last year, all abdominal sections without adhesions (sixteen in number) got well, excepting two cases of hæmorrhage due to the employment of the prevalent imperfect methods of tying the pedicle.[1] This accident ought not to have occurred, and has not occurred to me since. As far, therefore, as these 105 cases are determinative, I feel justified in inferring that cases of abdominal section for removal of the uterus or appendages in which there are no adhesions or development in the broad ligament (the patient being in good condition for operation), ought to recover in all except rare cases of unavoidable accidents. Of the twenty-one cases of vaginal section of last year all recovered, making, with those of the present year, thirty-seven cases with one death, or a mortality of 2.7 per cent. Hence I also infer that vaginal section, in the cases in which it is indicated, is at present safer than abdominal section.

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[1] I am including exploratory incisions in which the adhesions were not interfered with.

When extensive adhesions, development in the subperitoneal tissue, or pus accumulations occur, we have desperate cases to deal with, and get a high death-rate after our operations. Of the eight deaths in this series five belonged to this class, viz: one malignant and four developed in the broad ligament.

Another cause for a high mortality is the debilitated and often septic condition of the patient at the time of the operation. One patient was so nearly destroyed by a pyosalpinx that the operation was done as a last resort. In one case the abdominal cavity was at the autopsy found healthy, and the death caused by exhaustion and suppuration of hypodermic needle punctures in the thigh. This was also a last resort case. In another case of carcinoma of the cervix the operation (vaginal hysterectomy) was the easiest and most perfect operation I had yet done, but the patient had taken morphine and alcohol to such an extent that she died of their effects. In another case a patient with uterine sarcoma died, three weeks after the operation, of inanition. This case I have not included in the mortality, as no connection between the operation and the death could be found by the pathologist at the autopsy —the wound was healed.

One of the most important things in the development of peritoneal section must be the elimination of the accidental. But for a sponge left in the abdominal cavity in one case, the infection by an assistant in another, and an accidental and unnoticed rupture of the stump sac in another case, the general mortality would be 8.77 per cent., instead of 14 per cent.

Yet the experience derived from these eight fatal cases has been of much more value to me than that derived from the forty-nine recoveries. Indeed, I regard it about as difficult to become a first-class peritoneal surgeon without an extensive experience with fatal cases, as for a rich man to go to heaven.

DIAGNOSIS.

If what I have said should prove to be in accord with the experience of others, then, by means of an accurate diagnosis of the local and general conditions, we can speak thus to our patients: To one, "Your chances of surviving the operation are 98 or 99 in 100; the danger need not deter you from seeking its benefits;" to another, "Your chances are 90 in 100, but your disease will not shorten your life—do not take the risk;" to another, "Your chances are from 80 to 90 in 100, but the remote risk is greater; take your chances now, lest they be worse hereafter."

Accuracy of diagnosis is difficult, but not impossible of attainment, and will perhaps only be attained by those who have opportunities for verifying and correcting the diagnosis by peritoneal section. Its want is one of the most conspicuous imperfections of abdominal and pelvic surgery, yet one of the most valuable attainments.

SUBSEQUENT HISTORY.

The determination of the utility of these operations depends largely upon the remote results. In a few of the cases of oöphorectomy for diseased appendages the cure has been immediate and complete, but in the majority the improvement has been gradual. As months pass by the reports become more and more favorable. It has been an agreeable surprise to note the excellent results in hystero-epilepsy and mental failure. I have altogether removed ovaries for such mental conditions in twelve cases, with immediate or rapid recovery in five cases, gradual improvement in six cases, and a persistence of symptoms in one case. I am in consequence inclined to regard it as an operation of great value not only in cases entirely dependent upon pelvic disease, but in those in which ovulation or menstruation is only an exciting cause. It is often a necessary step to the cure, and makes the cure by other means possible.

SHALL WE EXHAUST ALL OTHER THERAPEUTICAL RESOURCES BEFORE PERFORMING PERITONEAL SECTION FOR DISEASED APPENDAGES?

I would answer, if that means to try all remedies, decidedly no—not any more than I should try version, embryotomy, symphisiotomy, ergot, etc., before resorting to Cæsarean section in a case of labor at term with a conjugate of one inch. After examining and studying my case I would claim the same right of judgment, and not wait until too late to operate in the one case any more than in the other.

CURE OF RETROVERSION.

I have to report the cure of four cases among the eight of retroversion and retroflexion in the vaginal ovariotomies and oöphorectomies. This was accomplished by leaving an iodoform gauze tampon under and in front of the replaced cervix uteri for forty-eight hours after the operation. The exudates and adhesions about the stumps and between the anterior and posterior walls of the recto-uterine pouch often fixes the uterus in the position in which it was tamponed. If the uterus fall back into retroversion when the tampon is removed, it may tear loose a recent adhesion and cause some disturbance, as it did in three cases; but this is of course only temporary.

AFTER-MANAGEMENT.

I seldom give opiates, and consider them often injurious. Yet, after the bowels have moved the main objections to their use have subsided, and indications for them may arise. There are cases in which they are required almost immediately after the operation, to insure quiet. The time when they are contraindicated is, I think, from the end of the first to the end of the fourth twelve hours P. O. By paralyzing peristaltic action they favor adhesions of the intestinal loops in the positions in which they were placed or pushed at the operation, and which may be such positions as will prevent the intestines resuming normal functions.

The most valuable and striking action of salines is when they are administered during the second and third twelve hours for symptoms of intestinal obstruction, viz: tympanitis and regurgitation, without nausea, of all fluid taken, often following a few hours of gastric quiet. In such cases the saline acts by filling the intestinal loop with fluid and favoring normal peristalsis, tearing them loose from their adhesions and forcing the fluid through them.

It has been supposed by many, as well as myself, that twenty-four hours was long enough to leave the forceps on the broad ligaments in vaginal hysterectomy; yet I report a case of almost fatal hæmorrhage following their removal in thirty-six hours (No. 7). With regard to the advantages of forceps, the question is not whether in the concrete case the forceps or ligatures are better or safer, but rather, which can in the given case be best applied. When the uterus can be pulled down, five ligatures can be applied to each broad ligament quite rapidly and safely; when the uterus can not be pulled well down the forceps reach better. The quintuple ligature, when the parts can be pulled down, is safer than the forceps, because the broad ligament is not of equal thickness throughout, and portions of it are liable to receive too little pressure by the forceps and either bleed or slip out.

A number of the charity cases were done before classes ranging from thirty to fifty students, and recovered without a bad symptom.

In one case, Sophie N., three sections were made upon the same patient, a vaginal oöphorectomy, a laparo-hysterorrhaphy, and an inguinal oöphorectomy. The ovary having been drawn forward by the hysterorrhaphy, I at last entered the abdominal cavity by way of the inguinal canal.[2]

In the few abdominal hysterectomies the stump was treated extraperitoneally, and each time with success. In one case (No. 2) I adopted a new method by separating the bladder and anterior vaginal wall from the cervix and fixing the stump extraperitoneally in the vagina.[3] When practicable I should call it, as far as the subsequent condition is concerned, preferable to abdominal fixation. I have since employed it successfully in two other cases, and to my utmost satisfaction.[4]

SUMMARY.

	Whole No.	Recovered.	Died.	Per cent. Recovered
Ovariotomies—Abdominal.				
Intraperitoneal tumors	11	10	1	90 9
Subperitoneal tumors	7	3	4	42 8
Ovariotomies—Vaginal.	3	3	...	100.
Oöphorectomies—Abdominal.				
For diseased appendages.	15	13	2	86 6
For general conditions.	2	2	...	100.
Oöphorectomies—Vaginal.				
For diseased appendages.	5	5	...	100.
For general conditions.	1	1	...	100
Hysterectomy—Abdominal.	4	4	...	100
" Vaginal	7	6	1	83 3
Laparo-Hysterorrhaphy	1	1	...	100.
Exploratory incision	1	1	...	100.
Summary.	57	49	8	86
Mortality, excluding subperitoneal ovarian tumors, is 8.7 per cent., viz.:	50	46	4	91.3

MEDICAL PROGRESS.

STROPHANTHUS IN INFANTILE DISEASES.—M. MONCORVO has treated infantile diseases with strophanthus, and comes to the following conclusions: As a diuretic and for combating cardiac disturbance strophanthus is invaluable in infantile therapeutics. Its action is prompt and energetic. It is perfectly innocuous. The tincture in mitral or aortic lesions with hyposystole and oliguria restores cardiac tone, regulates the rhythm, and strengthens the pulse. In infantile pneumonia or broncho-pulmonary affections, accompanied by cardiac weakness, strophanthus is a valuable heart tonic. M. Moncorvo has not observed any marked influence on the nervous system or temperature. The action of strophanthus persists long after the treatment has been discontinued. M. Moncorvo employed an alcoholic tincture, in doses varying from 4 to 28 drops in twenty-four hours.

GONORRHŒAL INFLAMMATION OF THE EYE.—Kemény (*Centr. Bl. für Bak. und Parasitenkunde*) reports a case of accidental autoinfection of the right eye with gonorrhœal virus in the person of a soldier, who was suffering at the time from acute gonorrhœa. Actual proof of the character of the conjunctival inflammation was furnished by the discovery of gonococci in the secretion. The gonococci were found, as in urethral gonorrhœa, in the protoplasm of the pus corpuscles.

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[2] See Transactions of Chicago Medical Society for Dec. 16, 1889.

[3] See Transactions of American Gynecological Society for 1889

[4] See Transactions of Chicago Medical Society for Dec. 16, 1889

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SATURDAY, MARCH 15, 1890.

THE NAVAL MEDICAL CORPS.

The approaching close of the medical college terms renders pertinent and timely the suggestion of one desirable field of professional occupation open to the young graduate who has been well educated, to wit: the medical corps of the United States Navy, in which there are now *eleven*, and will be during the year, independent of possible casualties, *thirteen vacancies*. From the very creation of this department of the naval service by Act of Congress, approved March 27, 1794, contemporary with the establishment of a naval force, this corps has maintained its high professional standing by the exclusion of unqualified candidates, and by a subsequent examination of the assistant surgeon, formerly five, but now only three years after his admission, before he is recommended for promotion to the grade of surgeon, which examination successfully passed, his future depends upon his own conduct as an officer and a gentleman.

For many years the applicants for admission into this corps far exceeded the vacancies, and they comprised the best element among the young graduates. The Board met annually in the spring, after the college commencements, and successful candidates awaited the occurrence of vacancies, the entire number rarely succeeding in obtaining commissions, those not doing so consequently having to renew their examination the following year. Recently this has not been the case, the number of applicants not having been sufficient to meet the demand.

The position of the medical officer in the navy is an attractive one. When on sea service he has the opportunities for travel in foreign countries, where his official position admits him to the highest social circles, while his duty on shore is always at the large sea-ports, at which the navy yards, naval hospitals and naval establishments are located, and where facilities for study as a diversion exist which do not come to his young confrère in the army.

The reputed severity of the Naval Board examination has doubtless deterred many well-qualified young men from presenting themselves; but those who have passed declare that they were asked nothing which a well prepared graduate in medicine should not know, while inspection of the written work of rejected candidates, which is filed at the office of the Surgeon-General of the Navy, and is accessible to those candidates and their friends, satisfies the inquirer that no other decision was possible.

The routine procedure for admission into the medical corps of the navy is practically the same as that for the army. Permission is granted by the Secretary of the Navy, after formal application, to young men between 21 and 26 years of age, of sound physical condition and properly attested moral character, to present themselves for examination by the Naval Medical Board, composed of medical officers of the higher grade. After the preliminary examination the candidate prepares an autobiographical sketch, detailing his opportunities for acquiring an education, and afterwards an essay on some assigned professional topic and written answers to a series of comprehensive questions in the various departments of medicine. An oral examination follows by the several members of the Board, in the presence of all, upon each branch of medicine and upon such collateral studies as the candidate may have pursued, with the object of ascertaining, not so much the amount of information he may have acquired by rote, as the extent of his understanding of the fundamental facts and principles which constitute the science of medicine. Finally extemporaneous chemical and pharmaceutical exercises, the clinical diagnosis and treatment of actual patients in hospital, the adjustment of surgical apparatus and appliances, and the performance of operations upon the cadaver exhibit, his acquaintance with the practical requirements of the healing art, and his fitness to assume its responsibilities under the emergencies which sometimes place the issue of life or death upon his unaided knowledge and skill. Manifestly such a course of examination, written, oral and practical, satisfactorily determines whether the candidate has received a good education in medicine, and is only such as should be required of every aspirant for a doctor's degree. The subsequent second examination preliminary to promotion to the grade of surgeon, *three* years after admission, presupposes a wider practical acquaintance with the various branches of medicine and a familiarity with its current literature.

The interest of the Bureau of Medicine and Surgery in the young naval medical officer does not end with his examination. Opportunities for self-improvement are liberally provided, and individual research and investigation are encouraged by the supply of apparatus, instruments or other facilities required, and by the publication of essays voluntarily contributed, as well as by the requirement of annual statistical, medical and sanitary reports from every officer in charge of the medical department of a vessel or station.

The medical officer of the navy, at the very outset of his career, is made to understand that his first duty as a physician is to protect the community in which he is established from the ravages of disease, and herein the medical corps of the navy usually exemplifies the real mission of the medical man in civil as in military life--to place those who are under his care in the best possible sanitary condition; to zealously guard against the operation of preventable causes of disease; to antagonize the morbific agencies that elude his vigilance, and thus to reduce to a minimum the necessity for therapeutic measures; and, finally, to use natural agencies for purposes of cure whenever these can replace pharmaceutic administration. The sanitary supervision of a community like the navy is much simplified by the preliminary physical examination of every officer and enlisted man—adults and adolescents—who enter it, and by their compulsory subjection to regulated habits in food, drink, personal cleanliness, etc. The immature and the very old, the weak and decrepit, women, with their special train of ailments, and those predisposed to disease—classes which in civil life outnumber all the rest—are excluded from enlistment, so that the duties of the medical officer are free from many of the disagreeable and painful attendants of the practice of medicine on shore. Except for the incidents of war, epidemic visitations, or the vicissitudes of the sea, his work on well-disciplined and well-appointed vessels and at naval stations will be chiefly that of sanitary supervision.

The pay of the assistant surgeon while on leave or waiting order is $1,000 a year, on shore duty $1,400, and at sea $1,700, with a ration in money of thirty cents a day, making his initial sea-pay $150.75 a month. After passing his second examination, three years after his original appointment, he is entitled Passed Assistant Surgeon and receives $1,500 on leave or waiting order, $1,800 on shore duty, and $2,109 at sea, with an increase of $200 in each of these if not promoted to surgeon within five years. After attaining the grade of surgeon his pay is progressively increased every five years until twenty years after date of commission, when it remains stationary. The pay of the medical officer of the navy after reaching the grade of surgeon, therefore, ranges from $2,000 to $3,000 while off duty, $2,400 to $4,000 while on shore duty, which is usually accompanied with commodious public quarters, and $2,909 to $4,509 while on sea duty. The Surgeon-General holds the rank and receives the pay of Commodore, to wit: $5,000. The pay of the medical officer continues without intermission from his entrance into the service until the time for his retirement after forty years' service or on attaining the age of 62 years, after which, until his death, he receives three-fourths of the highest sea-pay of his grade, although he is not called upon for any duty. Should he die from causes originating in the line of his duty, his widow and minor children receive the pension provided by law for his rank.

The numbers and grades of the naval medical corps as now established are as follows: Fifteen *Medical Directors* having the relative rank of Captain in the navy (Colonel); fifteen *Medical Inspectors* ranking with Commander (Lieutenant-Colonel); fifty *Surgeons* ranking, according to seniority, with Lieutenant-Commander (Major) or Lieutenant in the navy (Captain in the army), and ninety *Passed Assistant* and *Assistant Surgeons* of the rank of Lieutenant or Ensign (First and Second Lieutenants in the army). The increase in the number of ships will soon necessitate a reorganization of the *personnel* of the navy, and it is, therefore, probable that the medical corps, with the other branches, will receive a large accession of numbers and increase of pay.

SIMPLICITY THE SEAL OF TRUTH.

DR. ROBERT KOCH, in the minds of many the foremost scientist and physician of living Germans, is in manner of life the personification of simplicity. His demeanor is said to be so plain and free from self-assertion that, by comparison with him, certain others of his *confrères* of the Berlin profession appear haughty and unapproachable. As an illustration of Dr. Koch's habits, it is said that when he travels he is quite as apt to be found taking a third-class railway ticket as any other, while the majority of his students would consider their dignity compromised by anything less than a second-class passage. In other matters as well are indicated attributes of mind and character which place him in the right line of descent from the great BOERHAAVE, whose favorite motto was "*Simplex sigillum veri.*" And this is the legend that is graven on his monument in the St. Peter's church at Leyden, by her grateful citizens, a fact which has put in the mouths of thousands the admirable sentiment, "Simplicity is the seal of truth," hundreds of whom have probably dwelt but lightly on their debt to the great professional talents of him whose life was squared to that rule. Simplicity is the trait of the master, while the lack of it seems entirely natural to the novice. As it is the single flower that produces the seed, while the double one beside it perishes with its beauty, so there is that singleness of purpose and simplicity of method that bear the fruit of life-saving discoveries, such as the genius of Boerhaave gave to his generation and such as Koch's labors promise to yield in surpassing measure.

PERMANENT DUTIES FOR THE ANNUAL MEETINGS.

An amendment offered by Dr. GIHON which proposes to change the first day of each annual meeting from Tuesday to Wednesday will come up in its order at Nashville.

While this subject is under discussion it would seem desirable also to consider the propriety of making the dates of the annual meetings permanent.

In the present number of the JOURNAL we publish a list of thirty-eight State Medical Societies, the names and addresses of the secretaries, and also the places and dates of their annual meetings for the current year.

These societies are all of them closely affiliated with the Association, and none desire that their State meetings shall conflict with those of the Association. It so happened last year that the Illinois State Medical Society had previously named May 20, 1890, as its next date of meeting. Later, and as a matter of convenience to those who were to entertain the Association, its next annual meeting was set for the same day. As a result the officers of the Illinois State Medical Society were obliged to issue notices to all their members and to change the time of their State meeting from May 20th to May 26th, as announced in the JOURNAL of March 1. Referring to the table it will also be found that the annual meetings of the State Societies of Michigan and Missouri are to be held on the same day. It is desirable, if possible, that in these States such arrangements may still be made as to conserve our common interests.

When we remember that thirty-eight States are each year to determine the dates of their meetings, it is obvious that unless all are advised as to a fixed time when the Association shall hold its meetings, such conflicting appointments will constantly occur.

It seems necessary therefore, that as in times past we fix upon a definite day in May for the meetings in the South and upon the corresponding day in June for those in the northern sections of the country, and that these dates be made perpetual.

EDITORIAL NOTES.

HOME.

EXPLANATORY NOTE.—The address of Dr. Jacobson, entitled "Homœopathy and Medical Progress during the Present Century," to which reference was made in an editorial last week as appearing in that number, will be found in the present issue of THE JOURNAL.

NEW YORK COUNTY MEDICAL ASSOCIATION.—Dr. George Tucker Harrison, the Vice-President of the Association, has been elected to the Presidency, made vacant by the decease of Dr. C. S. Wood. Dr. S. B. W. McLeod has been elected to the Vice-Presidency.

Bequests to New York Charities.—Under the will of the late John Jacob Astor, St. Luke's Hospital will receive $100,000, and the new Cancer Hospital an equal amount.

An Emergency Hospital has been provided at Denver, Col., by the members of a voluntary society, known as the Associated Charities. For the time being, the hospital will be located at a house which has been rented for its use.

Prize Essay.—The Medical Society of the State of New York offers a prize of one hundred dollars, payable from the Merritt H. Cash prize fund, for the best original essay on any medical or surgical subject. The conditions are: That the competitors shall reside in the State of New York; that the essays shall be either printed or type-written; that each essay shall be designated by a motto on the title page; that a corresponding motto, together with the name of the writer, shall be enclcosd in a sealed envelope and attached to the essay; and that all esays shall be sent to the chairman of the Committee on Prize Essays, Dr. George F. Shrady, New York, prior to January 1, 1891.—F. C. Curtis, Secretary. Dr. Daniel Leroy, of New York, and Dr. Eugene Beach, of Gloversville, are other members of the Committee.

Chicago Polyclinic.—A special course of nine or more lectures on "Abdominal and Pelvic Surgery," with demonstrations on dogs and cadavers, will be given at the Chicago Polyclinic by Profs. N. Senn, C. T. Parkes, Chris. Fenger and W. T. Belfield, beginning March 24.

New York Dispensary.—The New York Dispensary, which is the oldest institution of the kind in the city, and probably in the country, has just issued its centennial report. It was founded in 1790, and is not only the oldest, but the largest dispensary in New York. In presenting this report of its increasing work for a hundred years, the Board of Trustees call special attention to the territory in which its ministrations are carried on, which includes within its borders the poorest part of the city, where the assistance which such an institution can give is most constantly in demand; and also state that, notwithstanding the size of this territory (larger than that of any other dispensary in the city) and the number of its regular patients, medical and surgical aid is also given to the deserving poor of other parts of the city. In the hundred years of its existence, the medical staff has treated an aggregate of 2,142,999 patients, and at the present time as many as 500 cases are treated in a single day. During the year just closed there were 44,331 new cases; a larger number than in any preceding year.

FOREIGN.

Sickly Children at Two Dollars.—When Stanley's expedition reached Usambiro, the station of Missionary Mackay, on the south shore of the Victoria Nyanza, the sick-list was so heavy that a halt for rest was imperative. Mr. Mackay soon found that the feeble and sick children were being bought up by the natives, for two goats apiece; so that he was led to purchase about twenty-five weak children, "On Mission account," to save them from slavery. To use his own words: "The amount I have paid is two dollars per head."

Dr. Mackenzie's Successes in the Courts.—Sir Morrell Mackenzie has won another libel suit, as we are informed by cablegram, the *St. James' Gazette* having been mulcted to the extent of $7,500, or just ten times the sum that the *London Times* had to contribute to his solacing, as the result of a similar suit. Dr. Mackenzie has been fortunate both at Court and in the courts.

Pennsylvania Hospital Appointment.—Dr. Morris Lewls has been appointed to succeed the late Dr. James H. Hutchinson as member of the medical staff of the Pennsylvania Hospital.

A Venerable Virginia Physician.—Dr. Thomas T. Slaughter, of Madison County, Virginia, was a graduate from the University of Pennsylvania in 1820, and who has continued in practice sixty-four years, retiring only about a year ago. He is now in his eighty-sixth year and the senior graduate of his school in the Old Dominion State.

Cholera in Asia.—The Russian Government has sent Dr. Avedik Babajew, who is the head of the Sanitary Department at Tiflis, to Persia, to report on the cholera in that country. A case of cholera is said to have occurred at Bologna. On investigation it was found to be one of sporadic, and not Asiatic, cholera.

TOPICS OF THE WEEK.

AMERICAN PHYSIOLOGICAL SOCIETY.

With the wish to encourage physiological research, a member of the American Physiological Society has offered two hundred and fifty dollars for the best research or researches bearing on the subject stated below, viz.:

"The regeneration of severed spinal nerves in mammals, including man, with special reference, 1, to the reunion and return of function in such severed nerves, without degeneration of the distal portion; 2, to the possibility of union with return of function between the central portion of any one spinal nerve and the distal portion of any other (*e.g.*, the central portion of the ulnar with the distal portion of the median)."

Conclusions to be supported, so far as possible, by histological as well as physiological evidence.

The competition is limited to residents of North America, and the prize to be awarded for original work done after January 1, 1890.

The award will be made by those persons who on October 1, 1891, constitute the Council of the American Physiological Society.

In making its award, the Council will take into consideration researches of which printed or legibly written accounts, marked on the outside "Nerve Physiology Prize," have been received by the then Secretary of the Society before October 1, 1891.

Previous publication will not debar a research from the competition, provided the work has been done after January 1, 1890.

The Council reserves the following rights: To withhold the prize if, in its opinion, no research presented is sufficiently worthy; to award only a part of the prize if, in its belief, a research, though meritorious, does not deserve the whole; to divide the prize between two or more candidates in ratios which seem to it just; and if it think it desirable, to require a competitor to demonstrate his experiments and histological preparations to a committee appointed by the Council.

For the present, communications concerning prize should be addressed to H. NEWELL MARTIN, Sec'y, Johns Hopkins University, Baltimore, Md., February 10, 1890.

STRANGE VARIATIONS.

The fact is, we are passing through a period of strange variations in climate and temperature. Under the influence of unknown forces the adjustment of normal heat and cold seems disturbed, and the usual order of things appears reversed. Winter has certainly gone astray. There has been unusual moisture, unusual heat, unusual everything; and the present season is a practical illustration of the French saying, that nothing save the unexpected is perfectly sure to happen, and "weatherologists" are aghast. Winter is warm and summer is cold, the wind blows great guns, and the times are sadly out of joint. The year that has gone will long be remembered as the warmest and the wettest since the establishment of the Signal Service in 1871. Whether the general conclusion is warranted that the climate of the north temperate zone is gradually changing may be a matter of doubt. But certainly the climatic phenomena have been of a unique and peculiar character. And if these general atmospheric conditions are continued through the present winter, it will be sufficient to place them among the most remarkable freaks of weather that have ever been recorded.

It is about two years now since the remarkable rainfall began to be apparent. The average annual rainfall from January, 1871, to December, 1877, was about 44 inches; in 1888 it was 52.95 inches, and in 1889 it was about 59 inches. Including these two years, the average for the last nineteen has been nearly 46 inches. The average temperature for the year 1889 was much higher than that of most preceding years, the excess of heat amounting altogether to several hundred degrees. Last year there was a deficiency of heat almost as great. Several times during the year of 1889 the rainfall was so heavy as to cause disastrous floods. The worst of these, of course, was the memorable flood of Johnstown. The great storm of September 9, 10 and 11 will never be forgotten. For three days a terrific gale prevailed, the Sandy Hook peninsula was turned into an island, and hundreds of houses were surrounded by water, and their inmates cut off for several days from all communication with the outside world. Taking these things into consideration, it seems to be evident that some cause out of the ordinary run has been at work during these two years, and surely nothing could be more propitious for the rapid spread of influenza than the remarkable changes that the weather is at present undergoing.—*Medical Classics.*

THE PSYCHOLOGY OF EPIDEMICS.

Every epidemic carries in its train curious exaggerations of many well-recognized characteristics, and these frequently call for appreciation and for treatment almost as much as the disease in which they originate. Perhaps one of the most striking of these mental perversities is to be found in the idea that the epidemic is to be treated by "common sense," or by nostra which have been largely advertised, or by specifics which are known to the laity mainly through their frequent mention in the daily press. Those suffering under this delusion feel that it is wholly unnecessary to seek skilled assistance, and they boldly dose themselves with remedies of whose power and properties they are absolutely ignorant. In Vienna it has already been found necessary to forbid the sale of antipyrin except under doctors' prescriptions, as no less than seventeen deaths were attributed to stoppage of the heart's action owing to overdoses. The freedom with which the prescription of this remedy has been assumed by the public has long since been viewed with anxiety by the medical profession, and frequent warnings have already fallen upon deaf ears; and yet it is to be feared that if the epidemic of influenza should spread, many more examples of recklessness will have to be recorded. Mr. Labouchere, claiming to act "by the light of common sense," upon having "a cough, a headache, and an all-overish ache," accompanied by sneezing, diagnosed the prevailing epidemic and at once administered to himself "thirty grains of quinine," and to meet the cough he took "unlimited squill pills." He writes that the one "settled the fever" and the other "settled the cough," and that in four days he was quite well. Upon this last fact he is certainly to be congratulated, though we trust that others may not be impelled, "by the light of common sense," to follow him in such heroic measures, or to emulate his example by trying the effect of antipyrin in similar unlimited doses. It is serious enough to cope with an epidemic and its sequelæ, without having matters complicated by ignorant and reckless experimental therapeutics.—*The Lancet.*

DANGER OF FLUSHING THE PERITONEUM WITH SUBLIMATE.

Of all the recent innovations in abdominal surgery, flushing or irrigation of the peritoneum is undoubtedly the most popular in the best sense of the word. Operations for the removal of diseased uterine appendages, electrolysis for fibroids, and complicated manœuvres in the region of the gall bladder, duodenum, stomach, or kidney are seldom taken in hand except by experts. Every surgeon, hower, may be called upon to open the peritoneal cavity, and one of the best safe-guards against the dangers of intraperitoneal operations is flushing of the peritoneum, judiciously performed. The success of this practice has urged many surgeons to seek yet higher success by various modifications.

Mr. Lawson Tait uses fresh water, and others can claim high success where the peritoneum is flushed by the same unsophisticated fluid. But the antiseptic school of operators have largely adopted this practice. Of necessity, they had to take a great physiological problem into consideration: How much of the antiseptic must be mixed with the water poured into the peritoneum so as to ensure asepsis without poisoning the patient?

The merits of the antiseptic and the opposite school are not the purpose in the present argument. Surgeons of the former school believe than an antiseptic agent should be mixed with the water; so they are right to estimate the virtues and dangers of that agent. Dr. Gellé has shown (*Annali di Ostetricia e Ginecologia*, Florence, 1889) that sublimate is a perilous compound for flushing. He describes three cases of ovariotomy where a 1 in 10,000 solution of perchloride of mercury was employed. In the first case, violent abdominal pain and vomiting took place during the night after operation. On the morning a scarlatiniform rash appeared on the face, trunk and arms. No rise of temperature or salivation occurred. By the third day all bad symptoms disappeared. The second patient died from exhaustion through diarrhœa, fifty-two hours after the operation, where the walls of a dermoid cyst were sewn to the edges of the abdominal wound. Interstitial nephritis was discovered. In the third case parovarian cysts were removed. Obstinate vomiting lasted for two days. How far the sublimate was to blame, especially in the second case, which [illegible] complete, it would be hard to determine. Dr. Delbet's important researches must not be overlooked. He has shown that a large amount of the water first poured into the peritoneum is actually absorbed, especially if it contain a little table salt. In fact, the process is a true transfusion, more likely to act as such on the circulation than Dr. Münchmeyer's practice of injecting water into the subcutaneous cellular tissue, as a substitute for transfusion of blood in hæmorrhage after labor. Transfusion, however, is not what is wanted in flushing the peritoneum. What is especially to the point is another fact discussed by Delbet. After a certain amount of water has been poured into the peritoneum, no more can be absorbed; then strong antiseptic solutions can be added without fear of absorption, provided that they be displaced by a final injection of pure water. This process might have prevented the serious results in Gellé's cases. Unfortunately, though a very pretty physiological experiment, Dr. Delbet's method is complicated. The second flushing with an antiseptic solution, followed by a third with pure water, is hardly in accord with the principles of the strict antiseptic school, for, according to them, the third would undo all the good done by the second. Carbolic acid is almost as likely to irritate as sublimate, if injected in a sufficient amount to counteract sepsis. No wonder, therefore, that the majority of antiseptic surgeons prefer, we believe; sterilization of the water by prolonged boiling.

Flushing of the peritoneum has, in short, been widely adopted in abdominal surgery, with excellent results. Like all other surgical proceedings, it requires to be done carefully. It certainly displaces clots and noxious solid or fluid materials. It also checks, if it does not actually stop, hæmorrhage. It counteracts the shock due to the chilling of the viscera, whatever M. Pollaillon's experience may show to the contrary. Lastly, the transfusion of water into the blood, though not aimed at by the surgeon, is no doubt beneficial. Judging from the experience of "non-antiseptic" surgeons, pure water answers all purposes with safety. The question was the subject of instructive correspondence in the *Journal* last autumn. If, however, it should some day be shown that some antiseptic should be added, that agent will not be sublimate.—*British Med. Journal.*

THE HENRY W. GRADY, ATLANTA, GA., GENERAL HOSPITAL.

The genial, brave, and philanthropic editor of the *Atlanta Constitution,* "being dead, yet speaketh." As a monument to his greatness and goodness of heart, the authorities of Atlanta have appropriated $30,000 to erect a city hospital to bear his name, and the generous impulses of the citizens have led them to contribute $15,000 more. It does not seem to be doubted that at least $100,000 will be raised to establish this monument to Mr. Grady, which will, at the same time, prove a blessing to the people of Atlanta. This will be one of the very few general city hospitals in the South. Why cannot the push of Richmond merchants secure a like provision for the sick of Richmond who may need it?—*Virginia Medical Monthly.*

PRACTICAL NOTES.

CONCERNING THE EFFECT OF VENTILATION ON THE MICROÖRGANISMS SUSPENDED IN THE AIR.

Dr. Richard Stern (*Zeitschrift f. Hygiene*, Bd. 7, Heft 1) made his experiments in a room in which he could have perfectly quiet air, or a more or less complete ventilation. The openings in the walls of the rooms were so arranged that he could admit the air from without, either at the upper part near the ceiling and convey it off near the floor on the opposite side of the room (winter ventilation), or the air could be admitted near the floor and conducted out on the opposite side of the room near the ceiling (summer ventilation). The rapidity of the ventilation was also under complete control.

The air of the room was intentionally loaded with microörganisms. Pure cultures were mixed with the dust collected from school-rooms and factories. This was then dried and pulverized and blown about in the room. The air was then examined for the number of microörganisms, by Petri's method, at various times.

The conclusions arrived at are:

1. That the microörganisms rapidly sink to the floor in quiet air. The finer the dust upon which the micro-örganisms rest the slower the gravitation.
2. The usual ventilation, effecting a renewal of air from one to three times an hour, has no effect upon the removal of microörganisms with summer ventilation, and only to a very limited extent with winter ventilation.
3. Ventilation, effecting a more rapid renewal of air (six or seven times to the hour), does affect the removal of microörganisms, but is scarcely to be attained without a sensible draught.
4. A rapid and complete removal of the micro-örganisms from the air is only attainable with a strong draught.
5. Microörganisms are not blown off from the floor, walls, furniture, clothing, etc., even with the stronger draughts.
6. The evolution of steam in a room is not capable of rapidly and completely precipitating the microörganisms, although it hastens this process to a not very appreciable extent.—*Medical News.*

ANTIFEBRIN AS A HYPNOTIC FOR CHILDREN.

Amongst the many hypnotics which at present are being so liberally supplied by the chemists to the medical profession, it is well not to lose sight of the value of antifebrin in certain groups of cases. Although the drug suggests more than its action is to hinder the development of febrile condition, or, when that condition exists, to lower the temperature, still in many cases in my practice it has proved a valuable hypnotic and analgesic.

Its value has been most evident in cases of broncho-pneumonia, croupous pneumonia, and bronchitis, and that more especially in cases where children have been the sufferers. The marked relief which has frequently followed its administration has in many cases been extremely gratifying. Cases of fretful insomnia of the young, possibly partially caused by pain, fever, or general *malaise*, have been speedily relieved by the drug, and from six to eight hours of refreshing sleep have been induced. After sleep the awakening was natural, there being no excitement or confusion of thought. There was no period of excitement observed before the drug took effect. Along with the onset of sleep there was a fall of temperature, frequently a copious perspiration, at the same time the respiratory acts were slowed and the pulse-rate diminished. In no case have any evil effects been noticed, although the success of the drug induced its employment in a large number of cases.

The need of a safe hypnotic for children, such as antifebrin seems to be, will, I think, be readily appreciated, the number of cases where it is required being unfortunately very large. It is still further enhanced as a serviceable drug for children by the fact that it is comparatively tasteless, and also by the smallness of its dose; the dose being from two to five grains, depending of course on the age of the child. A useful way of prescribing it, I have found, is to place the powder on the dorsum of the tongue either alone or mixed with a little powdered sugar. It might also be given in the form of a mixture—the drug being insoluble in a watery menstruum—suspended by the aid of mucilage and sweetened by any of the various flavoring syrups. There is yet another important advantage in hospital and general practice over many recently introduced hypnotics, in the comparative cheapness of the drug.—John Gordon, M.D.—*British Med. Jour.*

IS PHENACETIN A REMEDY IN WHOOPING-COUGH?

Dr. R. Heimann, of Landau, answers the above question affirmatively, having used the drug experimentally in a case in which antipyrin entirely failed. The success was so surprising that he administered the drug in two other cases. It reduced the number of paroxysms, which had been from ten to fifteen per diem, to three, and on some days they entirely ceased, only reappearing at night when no phenacetin was given. Dr. Heimann gave a boy of three years six grains in four doses of one grain and a half, a girl of two years five grains in three doses, and an infant of seven months three grains in four doses, without observing the slightest ill effects. One grain and a half of phenacetin would, on the average retain its effect for three hours.—*The Lancet.*

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

Amminol as a Sewage Disinfectant—Meeting of the Pathological Society—Signs of Osteo-Arthritis, Periostitis and Senile Atrophy on Bones and Skulls of the Ancients—Chloroform Superior to Ether as an Anæsthetic—New German-English Medical Dictionary.

When the late Commission on Metropolitan Sewage finished its exhaustive inquiry in 1884, the commissioners recorded their deliberate conclusion that "no known process of precipitation purifies sufficiently;" but since then the Amines process has been perfected by Mr. Wollheim, of London, and in the opinion of many competent experts like Dr. Klein, who have examined the results obtained at Wimbledon, the problem has at length been successfully solved. The process derives its name from the fact that for the purification and sterilization of the sewage matter it utilizes certain organic bases belonging to the chemical group of the amines, or ammonia compounds, and whilst chemically efficient, it is said to be so economical that under ordinary favorable conditions it almost pays for itself. The amines, either pure or in the form of amine salts, are used in combination with lime, preferably milk of lime, the proportions varying in accordance with the nature of the sewage and attending conditions. At Wimbledon herring brine is being used, and is introduced into freshly made milk of lime. It is immediately decomposed and a very soluble gaseous reagent is evolved, to which the inventor has given the name of "amminol." This reagent announces its presence by a peculiar briny odor, similar to that of the sea-breeze. Amminol is described as a very powerful disinfectant, and when introduced into sewage it rapidly extirpates all microörganisms capable of causing putrefaction or disease. The disinfectant mixture is added to the sewage as it issues from the sewers, and is thoroughly intermixed with it by mechanical means. The effect is said to be almost instantaneous. By the action of the lime violent flocculation is set up and the suspended matters tend to subside. Simultaneously the putrid smell of the sewage is replaced by the peculiar briny odor of the reagent. In this state the sewage flows into settling tanks, where the subsidence of the solids takes place at a rapid rate. When it is complete (in a depth of 6 feet it is stated to take only half an hour) the clear supernatant effluent, completely deodorized and disinfected, may be discharged with perfect safety. In proof of the efficacy of the purifier it is stated that a sample of sewage which was examined by Dr. Klein contained 2,400,000 organisms in the cubic centimetre, and after treatment by the amines process was found to be perfectly free from organisms. The average cost is stated at from one-half penny to three farthings per 1,000 gallons of sewage, which would be equivalent for London, at an average of 130,000,000 gallons daily, to £125,000 per annum, or something less than a penny rate in the pound. This is little more than one-half the necessary expenditure estimated by Lord Brumwell's committee, and it takes no account of the possible revenue from utilizing the sludge in the form of solid cake or powder for manurial purposes.

At the recent meeting of the Pathological Society of London Mr. Eve showed some specimens of ancient Egyptian bones having signs of osteo-arthritis and periostitis, and some skulls showing senile atrophy. The bones dated from the time of the Ptolemaic dynasty, 1,300 B. C. Among many other interesting specimens two femora were particularly noticed, which showed a periosteal deposit like a frosting of the bone; there was some tipping of the extremities, showing the presence of osteo-arthritis. It was pointed out that the period at which these patients lived was one of high civilization, and the diet was mostly starchy, but nothing is known as to their beverages. A skull was marked with a remarkable symmetrical atrophy occupying a point near the parietal eminences. The outer table and diploe had entirely disappeared and only a thin lamina remained, dotted over with small apertures of blood-vessels. The specimen came from an old person, the bones being lighter than they should be, the jaw was edentulous, and the squittal suture was obliterated. Mr. Eve looked upon it as a case of osteo-arthritic periostitis having no connection with acute articular rheumatism. He thought the decided evidence of change round the vessels excluded the theory of congenital origin.

It is now nearly a year since the memorable cold and gusty afternoon when the reformers among the members of the Royal College of Surgeons found the gates of the institution in Lincoln's Inn Fields closed against them, and were compelled to seek another shelter for their meeting. Their object was to obtain for all members their ancient right to take part in the management of the college—a right which through carelessness had been allowed to lapse into the exclusive hands of the council. For years the grievance has been rankling, but all attempts to remedy it have hitherto failed. The reformers have now prepared a bill for this session of Parliament, by which the interrupted custom would again become part of the college's constitution. A deputation headed by Dr. Dunford Thomas. who throughout the agitation has taken a leading part on the democratic side, waited upon Lord Dunraven and asked him to take charge of this measure in the House of Lords. His lordship promised to give the request full consideration, and the reformers are now pretty confident that Parliament will at last have the opportunity of settling a dispute which has lasted so long.

At the London Hospital there has been an interesting case of sarcoma of the foot in a patient aged 16 years. Twelve weeks before admission a slight swelling had been noticed above the third toe of the left foot. It was first observed after running, but no kind of injury had been sustained. When the patient came under observation the front of the foot was occupied by a large globular swelling, apparently situated both above and below the metatarsal bones. The swelling on the dorsum was about the size of a large orange, smooth and firm. After removal of the foot an anterior posterior section showed that the growth was mainly situated on the inferior aspect of the metatarsal bones and sprung from the periosteum, especially from the second and third of these bones.

Dr. Roger Williams has made a careful examination of the hospital books. from which it appears that in ten years chloroform was administered at St. Bartholomew's Hospital 12,368 times, with fatal results in ten cases, being about one in 1,236. The most important result of Dr. Williams' investigations, however, is the discovery that when ether, instead of chloroform, has been used during the same period, there were only three deaths out of 14,581 instances. Dr. Roger Williams gives his verdict strongly in favor of chloroform as an anæsthetic.

The growth of science and literature constantly adding to medical nomenclature has long caused to be felt the necessity of a new "German-English Dictionary of Medical Terms." This want has just been supplied by Messrs. Frederick Treves, F.R.C.S., and Hugo Lang. Mr. Treves points out, in his preface, that the march of events has necessitated a thorough recompilation of terms.

G. O. M.

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Dr. S. Baruch at the Meeting of the Section on Practice of the Academy of Medicine—Cold Baths in Typhoid Fever.

At the February meeting of the Section on Practice of the Academy of Medicine, Dr. S. Baruch, who was not present at the meeting of the Academy a month before, when the treatment of typhoid fever was discussed, made a stirring and forcible plea for the systematic use of cold baths in this disease. However favorable some of our individual statistics might be, he said, the figures of the Board of Health reports demanded, in language more eloquent than words, that the profession should adopt some means that would enable them to make a more favorable showing. From 25 to 40 per cent. was the death-rate from typhoid in our American cities, and according to Dr. Delafield's investigation 26 per cent. was the death-rate in recent years at the New York Hospital.

Could these figures not be changed? he asked. Happily there was a method of treatment which had the sanction of long usage, the authority of judicious clinical observers, and the evidence of unimpeachable statistics. To further the universal adoption of this method he proposed to devote all his energy, for the reason that he had himself formerly been strongly opposed to it and was now a proselyte. It was unfortunately true, he went on to say, that our conceptions on the subject of hydrotherapy were exceedingly vague, and this was perhaps the chief cause of the absence of unanimity regarding, if not of the antagonism to, its application in typhoid fever, in which its fondest triumphs had been achieved. During a former discussion at the Academy of Medicine Dr. Baruch said he had taken occasion to illustrate the vagueness of the term cold bath as used in this city by citing two cases occurring in two of the largest hospitals, under two of the gentlemen who had spoken disparagingly of the cold bath treatment. One of these patients had the bath (?) administered by being wrapped in a sheet and sprinkled with ice-water until the temperature fell to a satisfactory point. The other was also wrapped in a sheet, which was kept saturated with ice-water by a sponge until the temperature was reduced from 106° to 101°. Surely these were not fair specimens of the cold bath treatment, and the fatal result in both cases could not fairly be charged to this method. The experienced hydrotherapeutist never used ice-water for prolonged application, the aim of all hydrotherapeutic measures being to refresh, to stimulate the nerve centres, and never to induce a sedative effect.

He contended, therefore, that until we adopted an approximately uniform cold bath treatment our discussions of this method would be nugatory and our patients would continue to swell the mortality lists. It had been objected to the Brand method that the physician should not be hampered by strict rules, but should be allowed to use his judgment in each individual case. This might be granted; but at the same time (just as the successful treatment of a tertian intermittent depended upon cinchonism of the patient before the paroxysm was due, whatever might be the manner in which the quinine was administered) the guiding principle, to keep the temperature below 103°, was not to be lost sight of, though the bath might be a little warmer or colder, or a little longer or shorter, according to circumstances. In the one case cinchonism protected the patient against the return of the attack; in the other the reduction of temperature indicated a condition of the nervous system which protected the patient against the deteriorating influences of the infective process. Another analogy might be drawn from the salicylic treatment of rheumatic fever.

Brand's rule, however, Dr. Baruch said, was not inflexible, as was shown by a letter which he had just received from him in reference to a case the bath treatment of which was detailed in one of our journals. In it he said: "By following my rule is not to be understood such treatment as was given by Dr. — to the child, which was so far reduced in strength and nerve power that it should not have been put into a cold bath, but into a warm one, until it gradually became accustomed to the cold bath, for twenty-four hours. To me it is surprising that Dr. — did not obtain greater disadvantage from the low temperature used in this case; it was a special piece of good luck. I always use warmer baths (usually of the temperature of the room) for twenty-four hours, if the patient has been ill over four days; often also from the beginning." From this extract, he went on to say, it would be gathered that Brand does not advise the plunging of any case into a bath of 65° without regard to individual conditions. The truth was that in no method of treatment was good judgment more necessary than in the treatment of typhoid by the cold bath.

The statistics furnished by men like Juergensen and Vogl were the best possible guide for this or any other country, because they were obtained from hospital practice, civil and military, and they represented the comparative merits of various methods. Military records in Germany were proverbially accurate, and Vogl was the chief of the garrison hospitals at Munich. He offered us the records of 8,325 cases of typhoid treated there during forty-seven years, mentioning each year the type of the disease, derived from symptoms and autopsies, the treatment pursued and the results. The mortality ranged from 40.3 per cent. in 1843 to 2.3 per cent. in 1877–78. Since 1875, when the cold bath treatment was systematically begun, the mortality had never exceeded 4.7 per cent., and the average was 2.7 per cent. To show the carefulness of the records, Dr. Baruch gave a number of extracts taken at random from Vogl's report, and then stated that it might be said, without fear of contradiction, that no therapeutic question had been so thoroughly canvassed as had been done in this report. It demonstrated, among other things, the interesting point that the combined method (water and medicinal) reached quite as high a percentage of mortality as in many of the years preceding, when the expectant treatment was employed, but that the death-rate under the systematic, unremitting bath treatment (Brand method) never exceeded, in seven years, 4.7 per cent., and averaged 2.7 per cent.; neither one of which figures had ever been reached before.

In the Poliklinik at Tübingen Juergensen had obtained even better results. During nine years 217 cases were treated by strict bathing according to Brand, and there was only one death. He used cold compresses for diarrhœa, and continued to bathe even when there was intestinal hæmorrhage. The official reports of the Second German Army Corps showed a reduction of the mortality, under systematic bathing, from 26.3 per cent. to 4.3; and in consequence of this success an order advising the general adoption of this method in the Army was issued by the Surgeon-General. Brand, the originator of the practice, pursued it for thirty years, almost entirely in a private *clientèle*, with the result of one death in 342 cases. Having stated that this wonderful success was due to the strictest attention to detail and the subjection to the bath treatment of every case that showed the slightest suspicion of typhoid symptoms, Dr. Baruch said that it was only by this course that cases could be brought under the influence of the cold bath before the fifth day; a point which is emphasized as essential for reaching the phenomenal success attained in the 1,200 cases reported by Juergensen, Vogl, Brand and the surgeons of the Second Army Corps. If it were objected that it is very difficult to make the diagnosis of typhoid fever before the fifth day, he would reply that the patient should be given the benefit of the doubt and be subjected to the treatment before the diagnosis was established. In fact, he would place every suspicious case of fever in the bath, if the temperature reaches 103°. This was the course pursued at Munich, and he himself constantly resorted to it both in private and hospital practice.

That the sway of antipyretics was now passing away, he went on to say, was evidenced from the recent discussions. The lethal influence of high temperatures was happily losing its hold on the profession; but we should take care that the receding tide did not sweep away the cold bath treatment, which had unfortunately been classed among antipyretic measures. Whenever we gave up this fallacious idea, the cold bath treatment would replace the unsuccessful antipyretic treatment completely. In the Fourth Congress for Internal Medicine, held in 1885, eminent clinicians expressed allmost unanimously the opinion "that until we obtain a specific curative agent for typhoid fever, such therapeusis is to be preferred which is capable of diminishing or removing the effects of the morbific agents, that this aim is most surely fulfilled by hydrotherapy, and that medicinal antipyretics act only against temperature elevation, but do not, like the bath, produce a modifying effect upon the fever process."

He thought it should be clearly understood that the Brand method is not a "nervous sedative," as had been claimed in a recent paper before the New York State Medical Society, but a refreshing measure, by which the depressing effect of the typhoid poison is to be counteracted. The system was tottering under the enfeeblement of all its functions by the effect of the infection upon the nervous system. The impact of cold water upon the periphery deepened the inspiration, more oxygen was inhaled, more carbonic oxide given off; the refreshing impulse was conveyed to the nervous centres from which the heart and stomach receive tone and the secretions activity. The *rationale* of the bath was so simple, he said, that if once appreciated, no attempt would be essayed to substitute it. The gentle frictions carried on while the patient was in the water stimulated the mucous coats of the superficial vessels, which, as Marcy and others had shown, are paralyzed by the infective process; thus giving rise later to heart failure from absence of propulsive aid. These vessels were thus dilated and the obstacle to heat dissipation removed; while the occasional cold douche over the head and shoulders again contracted the vessels briefly. In this way their activity was maintained. How different the effect of simply putting the patient in the cold water and leaving him in it undisturbed for fifteen minutes, or of wrapping him in a sheet and sprinkling ice-water over him, would be, a very little reflection would indicate.

The bath was not intended as a specific, curative measure; but its action was analogous to that of peripheral stimuli applied to other toxic conditions; and the stupor due to opium toxæmia, in which we had a poison circulating in the blood, which required time for its removal, furnished a fair analogy. Our anti-toxic measures would prove efficient in proportion to the earliness, persistency, and good judgment with which we applied them in the one case just as they would in the other.

Dr. A. L. Loomis in discussing the paper said that he was glad that Dr. Baruch was an enthusiast on the subject, and that he was willing to go as far as the law allows, and even a little further, in his advocacy of the method. When he compared the condition met with in typhoid fever to opium poisoning it seemed to him that he did not properly recognize the cause of the typhoid toxæmia, viz.: a specific infection. The two conditions were very different, and he did not see how they could very well be compared. As to the statistics of typhoid, he believed that if we based our opinions on them we were liable to error. During the last two months he had treated twenty cases of the disease by means of the cold coil, without a single death; but it did not follow from this that the cold coil was the best or only treatment to be used in typhoid. Dr. Baruch had unquestionably placed his statistics in a very enticing way before us; and yet he felt convinced that if he permitted himself to be guided wholly by them he would almost surely have reason sooner or later to regret that he had done so. At the same time, if the opportunity occurred to him to treat a considerable number of typhoid cases together he would be glad to give the method so eloquently advocated a thorough trial. From what little experience he had had with cold bathing in typhoid he believed that it was a powerful agent for restoring vitality if properly employed, and that it was a powerful agent for destroying vitality if improperly used. When the cold bath was given without regard to its effect upon the heart, the capillary circulation, etc., it seemed to him that it was liable to do very great harm.

The chairman, Dr. Francis Delafield, said that the point brought out in the paper that in the United States we had never really tried the Brand method he believed was correct; it being a fact that scarcely any one here had considered the whole treatment thoroughly. One reason for this, no doubt, was the inefficient character of most hospital nursing in this country. The great difficulty was to get a sufficient number of nurses for the very exacting requirements of the method. He confessed that he had had the idea that perhaps one reason why the patients treated by strict cold bathing recovered was because they received no medication whatever.

Dr. Baruch said that he was very glad to have been able to show that the main object of the treatment by cold baths was not to reduce temperature, but to furnish a restorative and stimulant to the nervous system. Brand, indeed, never claimed that his method was antipyretic. It was Liebermeister who was the leading spirit in proclaiming that the benefit derived from cold baths was due to their antipyretic effect, and after giving a bath he often administered 40 or 50 grs. of quinine for the purpose of keeping the temperature down after it had been reduced by the bath. But the result of this combined treatment was a mortality of 18 per cent. As to his analogy between typhoid toxæmia and opium poisoning, he granted that the comparison might be defective in some particulars; but, at the same time, he thought the main points would hold good. In both cases we had a profound poisoning of the system; though in one case the poison acted rapidly and in the other slowly. In both the poison would become eliminated in the course of time if we could but support the patient and prolong life until nature could accomplish this; and in both, therefore, the indication was simply to fortify the flagging powers until this could be accomplished. In regard to statistics, it was true that twenty or thirty, or even a hundred cases were of no practical value; but if we had vast numbers of cases, the correctness of whose data was vouched for by men of the highest scientific attainments and reputation, he believed that such statistics were to be trusted.

P. B. P.

"La Grippe" as a Bacterial Disease.

To the Editor:—Doubtless few now living will again have opportunity to observe so typical an illustration of the behavior of "germs" as a pathogenetic factor, as now exists in the prevailing epidemic of so-called "la grippe." The symptoms are notably consistent with its accredited cause, and with those of other familiar diseases of its class. Its fidelity of expression through the *mucous* surfaces is only equaled by its thoroughness in omitting no part of the same. In observing its selection of the lachrymal, nasal, pulmonary, gastric and intestinal surfaces, the writer looked not elsewhere for effects, until the *fourth* instance of severe (in one grave) aural implications and abscess clearly proved its identity in *this* locality. It appears, that nothing shall be lacking in this disease, to impress all doubters with its genuine parentage. Age, sex, condition, occupation, locality, diathesis, are all and equally its subjects. As judged by the meagre reports of its action in the medical press thus far given, its severity is far from uniform. The gastric type, as frequent in the writer's observation, is not only obstinate, but often induces a prostration alarming in degree. With a clean tongue these cases develop a nausea and vomiting which resists all treatment and continues three to six days and nights. These cases, from ejecting the clear seromucous material primarily, persist until blood and dark or coffee-ground ejections appear. Catarrhal symptoms proper are as often wholly absent as otherwise. Who is authorized to christen this nameless (not helpless) visitor? Nosological requirements excluded, it is safe to assume that a legion of its English victims would oppose its revision. More to be desired is a remedy. Assuming the inference correct, that the large class who develop mild symptoms are the subjects of less malignant or potential infection, it is possible that an agent would suffice for relief without the necessity of displaying properties at once germicidal and homocidal.

Characteristics of the disease favor a probability that a cure should be discovered among the agents recognized as antidotal of the class of causes producing it.

H. C. MARKHAM, M.D.

Independence, Ia., January 31, 1890.

MEASLES is epidemic in some towns in Indiana. In Harrodsburg, a place with a population of only about five hundred, there have been one hundred and seventy-five cases.

BOOK REVIEWS.

A HANDBOOK OF DISEASES OF WOMEN, INCLUDING DISEASES OF THE BLADDER AND URETHRA. By DR. F. WINCKEL, Professor of Gynecology, and Director of the Royal University Clinic for Women in Munich. Authorized translation edited by THEOPHILUS PARVIN, M.D., Professor of Obstetrics and Diseases of Women and Children in Jefferson Medical College, Philadelphia. Second edition, revised and enlarged, with 150 Illustrations. Philadelphia: P. Blakiston, Son & Co.

This publication which has passed rapidly to its second edition is a complete treatise upon the subjects enumerated on its title pages, in a closely printed and richly illustrated volume of 756 pages. The American gynecologists will find many valuable references to eminent authorities on the subjects of which the book treats, but will look in vain, except in one or two instances, for any mention or acknowledgement for American gynecology. The book presents a valuable review of foreign gynecology and serves to the reader a concise picture of its present status. To its eminent editor, whose name alone upon the title page of any book would insure it a reading, is due the thanks of all American surgeons who are unable to peruse the work in its original.

The work is divided into eight sections.

Section 1 includes Anomalies and Diseases of the External Sexual Organs—Historical—under the following chapters: Chapter i., Deformities of the Vulva; chapter ii., Hyperplasia and Hypertrophy of the Vulva; chapter iii., Hernia of the Vulva; chapter iv., Neoplasms of the Vulva; chapter v., Nutritive Disturbances, Inflammation and Exanthemata of the Vulva; chapter vi., Deformities and Diseases of the Vulva-Vaginal Glands; chapter vii., Injuries of the External Genitals.

Section 2 includes Abnormalities and Diseases of the Vagina under the following chapters: Chapter i., The Affections of the Hymen; chapter ii., Malformation of the Vagina; chapter iii., Displacements of the Vagina; chapter iv., Neoplasms of the Vagina; chapter v., Nutritive Disturbances of the Vagina; chapter vi., Neurosis of the Vagina; chapter vii., Foreign Bodies in the Vagina; chapter viii., Lesions of the Vagina and their Results, Vaginal Cicatrices.

Section 3 includes Anomalies and Diseases of the Uterus under the following subdivisions: chapter i., Malformations of the Uterus; chapter ii., Changes in the Form and Position of the Uterus; chapter iii., Neoplasms of the Uterus; chapter iv., Nutritive Disturbances of the Uterus; chapter v., Stenosis and Atresia of the Uterus, Hydrometra and Hematometra; chapter vi., Anomalies of Menstruation.

Section 4 includes Malformations and Diseases of the Fallopian Tubes, under the following headings: Chapter i., Incomplete Development of the Fallopian Tubes; chapter ii., Displacements and Malformations of the Fallopian Tubes; chapter iii., Neoplasms of the Fallopian Tubes; chapter iv., Inflammation and Tuberculosis of the Fallopian Tubes.

Section 5 includes Anomalies and Diseases of the Ovaries, under the following headings: chapter i., Anomalies in Development and Form; chapter ii., Displacements of the Ovaries; chapter iii., Neoplasms of the Ovaries; chapter iv., Nutritive Disturbances of the Ovaries.

Section 6 includes Anomalies and Diseases of the Uterine Ligaments, Peritoneum, and Pelvic Connective Tissue, under the following: Chapter i., Affections of the Round Ligaments; chapter ii., Affections of the Broad Ligaments; chapter iii., Inflammation of the Pelvic Peritoneum, Pelvic Peritonitis; chapter iv., Inflammation of the Pelvic Connective Tissue; chapter v., Intraperitoneal Effusion of Blood into the Pelvis; chapter vi., Parasites of the Female Genitals and Pelvic Connective Tissue.

Section 7 includes Anomalies of the Mammary Glands under the following chapters: Chapter i., Anomalies of Development; chapter ii., Malformations and Diseases of the Nipple and Areolar; chapter iii., Neoplasms of the Female Breast; chapter iv., Nutritive Disturbances of the Female Breast; chapter v., Mastodynia, Neuralgia of the Breast; chapter vi., Parasites of the Female Breasts; chapter vii., Foreign Bodies in the Female Breasts.

Section 8 includes Diseases of the Female Urethra and Bladder under the following: Chapter i., Examination of the Female Urethra and Bladder; chapter ii., Malformations and Diseases of the Female Urethra; chapter iii., Nutritive Diseases of the Female Urethra; chapter iv., Neoplasms of the Female Urethra; chapter v., Neuralgias of the Female Urethra—Foreign Bodies in the Female Urethra; chapter vi., Injuries of the Female Bladder; chapter vii., Neoplasms in the Walls of the Female Bladder; chapter viii., Nutritive Disorders of the Female Bladder; chapter ix., Foreign Bodies in the Female Bladder; chapter x., Neurosis of the Female Bladder.

REPORT OF THE SURGEON-GENERAL OF THE ARMY FOR THE FISCAL YEAR ENDING JUNE *30, 1889.*

This report is chiefly occupied with matters pertaining to the health and sanitation of the army in general and of individual posts in particular. A large amount of statistical matter has been arranged to illustrate these points, and interesting comparisons are drawn between the medical relations of our own army and those of European armies. About one-half of the report is made up of statistical reports of diseases treated at the various stations; these have been tabulated with much care. The entire report is a medical history for the year, of 24,726 men, representing the mean strength of the army.

ASSOCIATION NEWS.

American Medical Association.

Section on Diseases of Children.

All members of the American Medical Association who are interested in the subject of Pediatrics, are earnestly invited to prepare papers for reading in this Section at the meeting to be held at Nashville, Tenn., May 20, 1890.

There can be no department of medicine which should appeal to all the workers of the profession more than the diseases of children. The outlook is favorable to a large attendance in this Section.

Please send title of paper to either of the officers of the Section at as early a date as possible.

(Signed) I. N. LOVE, M.D. Chairman,
Grand Ave. and Lindell Boul., St. Louis, Mo.
E. F. BRUSH, M.D., Secretary,
Mt. Vernon, N. Y.

Office of the President, St. Louis, March 7, 1890.

MISCELLANY.

CONCERNING THE TENTH INTERNATIONAL MEDICAL CONGRESS.—I am directed by the Secretary-General of the Tenth International Congress to give the greatest possible publicity to the circular, the main points of which I herewith transmit to you with the request that they be published. Very respectfully yours,

A. JACOBI, M.D.
110 West 34th street, New York, March 7, 1890.

Invitation for an International Medical and Scientific Exhibition.

In connection with the Tenth International Medical Congress to be held in Berlin between the 4th and 10th of August, there is to be an International Medical and Scientific Exhibition. The exhibits will be of an exclusively scientific nature, as follows:

New or improved scientific instruments and apparatuses for biological and strictly medical purposes, inclusive of apparatuses for photography and spectral analysis as far as applicable to medicine.

New objects and preparations in pharmacological chemistry and pharmacy.

New foods.

New or improved instruments subservient to any of the departments of medicine, including electrotherapy.

New plans and models for hospitals, convalescent homes, and disinfecting and bathing insiitutions and apparatuses.

New arrangements for nursing, including transportation, baths, etc.

New apparatuses in hygiene.

Applications or inquiries inscribed "Ausstellungs-Angelegenheit," and accompanied with a printed card containing the name and address of the firm thus applying, ought to be directed to the Secretary-General, Dr. O. Lassar, Carlstrasse, No. 19, Berlin, N.W., Germany.

R. Virchow, President.

E. von Bergmann, E. Leyden, W. Waldeyer, Vice-Presidents.

O. Lassar, Secretary-General.

Health in Michigan.—For the month of February, 1890, compared with the preceding month, the reports indicate that cerebro-spinal meningitis, cholera morbus, inflammation of brain, dysentery, measles, whooping-cough, typho-malarial fever and inflammation of kidney increased, and that typhoid fever and cholera infantum decreased in prevalence.

Compared with the preceding month the temperature was slightly lower, the absolute humidity was less, the relative humidity was the same, the day ozone was less, and the night ozone was more.

Compared with the average for the month of February in the four years 1886–1889, influenza, measles, cerebro-spinal meningitis, cholera morbus, and membranous croup, were more prevalent, and cholera infantum, typhoid fever, typho-malarial fever and scarlet fever, were less prevalent in February 1890.

For the month of February, 1890, compared with the average of corresponding months in the four years 1886–1889, the temperature was much higher, the absolute humidity was more, the relative humidity was less, and the day and night ozone were more.

Including reports by regular observers and others, diphtheria was reported present in Michigan, in the month of February, 1890, at 58 places, scarlet fever at 77 places, typhoid fever at 34 places, measles at 69 places, and small-pox at 2 places.

Reports from all sources show diphtheria reported at 3 places less, scarlet fever at 15 places more, typhoid fever at 14 places less, measles at 42 places more, and small-pox at 2 places more in the month of February, 1890, than in the preceding month.

A Pneumatoscope.—The cable brings news of the invention of a wonderful instrument in Berlin, by means of which an exact differential diagnosis of diseases of the lungs will be possible. The inventor is Dr. Janiczewski. The description of the instrument is too indefinite to permit of an understanding of its *modus operandi*.

The physicians of Vienna having complained that patients make use of old prescriptions to obtain medicines, the Minister of the Interior has ordered that the physician who does not desire his prescription to be repeated may write upon it the words "*ne repetatur*," in which case the druggists will have no right to re-fill it.

LETTERS RECEIVED.

Dr. A. W. Strickler, Scottdale, Pa.; Dr. Barre, Pittsburg, Pa.; Dr. Carl Brumme, Detroit, Mich.; Dr. D. Bryson Delavan, New York; Dr. G. A. White, Sacramento, Cal.; Dr. G. F. Cook, Oxford, O.; Dr. F. F. Hume, New York; Dr. F. H. Stewart, Church Hill, O.; V. Ruzicka, Baltimore, Md.; Dr. A. C. Stokes, Trenton, N. J.; Dr. A. C. Lamothe Ramsay, St. Cloud, Minn.; Dr. F. Harris, Langford, S. Dak.; G. P. Rowell & Co., New York; Dr. S. P. Deahofe, Potsdam, O.; J. Walter Thompson, New York; Dr. R. J. Dunglison, Philadelphia; Dr. Frank H. Holland, Ft. Pembina, N. D.; F. A. Davis, Philadelphia; Dr. W. R. Nottage, Westport, Mass.; Dr. Chas. Denison, Denver, Col.; Dr. P. M. Carnrick, New York; M. R. Barrett & Co., Chicago; Dr. J. Berrien Lindsley, Nashville, Tenn.; Dr. E. W. Bartlett, Milwaukee, Wis.; C. A. Young, Nashville, Tenn.; Geo. F. Child, Chicago; Dr. J. R. Barnett, Neenah, Wis.; P. Blakiston, Son & Co., Philadelphia; National Typewriter Co., Boston; Joseph Robbins & Co., Quincy, Ill.; Dr. S. C. Ayers, Cincinnati, O.; Dr. Theophilus Parvin, Philadelphia; Dr. G. W. Gallagher, New Haven, Pa.; Allen & Yates, Buffalo, N. Y.; Philip J. Mitchell, Philadelphia; Dr. Giles S. Mitchell, Cincinnati, O.; Gustav E. Stechert, New York; Dr. G. K. Dickinson, Jersey City, N. J.; Dr. C. H. Wilcox, Berwick, Ill.; E. L. Shurley, Detroit, Mich.; Jas. Walker, Leeds, Eng.; The Paquin Vaccine Co., Columbus, Mo.; Dr. Geo. L. Eyster, Rock Island, Ill.; Dr. W. B. Henderson, Pittsburgh, Pa.; Dr. Henry Marcy, Boston; Dr. C. Green, Beaver City, Neb.; A. J. Howe, Cincinnati, O.; Dr. C. I Miller, Whitewater, Wis.; Dr. Geo. Weber, Brooklyn, N. Y.; Dr. A. L. Hummel, Philadelphia; Med. Dept. Univ., Washington, D. C.; Dr. A. J. Brobst, Macungie, Pa.

STATE MEDICAL ASSOCIATION MEETINGS IN 1890.

State.	Sec'ys Name and Address.	Time and Place.
Alabama . . .	T. A. Means, Montgomery. .	Birmingham, April 8.
Arkansas . . .	*L. P. Gibson, Little Rock*. .	*Little Rock, May 14*.
California. . .	W. W. Kerr, San Francisco .	Los Angeles, April 15.
Colorado . . .	H. W. McLauthlin, Denver .	Denver, June 17.
Connecticut. .	N. E. Wordin, Bridgeport .	New Haven, May 28.
Dakota	*R. C. Warne, Mitchell* . . .	*Sioux Falls, June 12*.
Delaware . . .	J. A. Ellegood, Laurel . . .	Wilmington, June 10.
Florida	A. W. Knight, Jacksonville .	Key West, April 8.
Georgia	King P. Moore, Macon. . .	Brunswick, April 16.
Illinois	D. W. Graham, Chicago . .	Chicago, May 6.
Indiana	E. S. Elder, Indianapolis. .	Indianapolis, May 14.
Iowa.	C. F. Darnell, West Union.	Des Moines, April 16.
Kansas	J. E. Minney, Topeka . . .	Salina, May 13.
Kentucky . . .	Steele Bailey, Stanford . . .	Henderson, May 14.
Louisiana . . .	P. B. McCutchon, *N. Orleans*.	*Baton Bouge, May 13*.
Maine.	C. D. Smith, Portland. . . .	Portland, June 10.
Maryland . . .	G. A. *Taneyhill, Baltimore* .	Baltimore, April 22.
Massachusetts.	F. W. Goss, *Boston*.	Boston, June 10.
Michigan . . .	Geo. *Duffield*, Detroit. . . .	Grand Rapids, May 20.
Minnesota. . .	C. B. Witherle, St. Paul. . .	St. Paul, June 19.
Mississippi . .	W. E. Todd, Jackson	Jackson, April 21.
Missouri. . . .	J. C. Mulhall, St. Louis. . .	Excelsior Sp'gs, May 20.
Nebraska . . .	M. L. Hildreth, Lyons . . .	Beatrice, May 13.
North Carolina	J. M. Hays, Oxford.	*Oxford, May 27*.
N. Hampshire.	G. P. Conn, Concord	*Concord, June 16*.
New *Jersey* . .	W. *Pierson, Orange*.	Schooley's Mountain, June 10.
New York. . .	E. D. Ferguson, Troy. . . .	New York, October 22.
Ohio.	G. A. Collamore, Toledo . .	Columbus, June 3.
Pennsylvania.	W. B. Atkinson, Philadelphia	Philadelphia, June 10.
Rhode Island.	W. R. White, Providence . .	Providence, June 12.
South Carolina	W. P. Porcher, Charleston .	Laurens, April —
Tennessee. . .	D. E. Nelson, Chattanooga.	Memphis, April 8.
Texas.	F. E. Daniel, Austin	Fort Worth, April 22.
Vermont . . .	D. C. Hawley, Burlington. .	Rutland, June 26. Montpelier, Oct. 9.
Virginia. . . .	L. B. Edwards, Richmond .	Rockbridge Alum Sp'gs, August or September.
Washington. .	C. L. Flannigan, Olympia .	Spokane Falls, May 14.
West Virginia.	J. L. Fullerton, Charlestown.	Wheeling.
Wisconsin. . .	J. R. McDill, Milwaukee. .	Milwaukee, June 4.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from March 1, 1890, to March 7, 1890

Major J. P. Kimball, Surgeon U. S. A., granted leave of absence for twenty days. Par. 1, S. O. 25, Dept. of the Missouri.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending March 8, 1890.

Medical Inspector W. K. Schofield, ordered for examination preliminary to promotion to Medical Director.

Surgeon D. McMurtrie, ordered for examination preliminary to promotion to Medical Inspector.

Asst. Surgeon Manley F. Gates, detached from Navy Yard, League Island, and to the U. S. S. "Kearsarge."

Asst. Surgeon H. N. T. Harris, detached from the U. S. S. "Kearsarge" and ordered home.

CORRIGENDUM.

In an editorial heading on page 385 of the present issue, referring to the annual meetings of the Association, read *Permanent Dates for the Annual Meetings* instead of Permanent Duties.

THE

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EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

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ORIGINAL ARTICLES.

THE PROPHYLAXIS OF TUBERCULOSIS.

Delivered in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY J. C. WILSON, M.D.,
PHYSICIAN TO THE HOSPITAL OF JEFFERSON COLLEGE, ETC., OF PHILADELPHIA.

This communication is based upon the fact, now incontrovertible, that the tuberculous diseases, including pulmonary phthisis, are specific infections due to a common cause, namely, the tubercle bacillus of Koch.

The purpose is to submit certain vexed questions concerning this group of diseases, of which pulmonary phthisis may be taken as a type, to the tests by which the same questions in regard to other diseases, universally admitted to be infectious, have been definitely settled.

These questions are:

1. Is pulmonary consumption hereditary?
2. Is it contagious?
3. Is it preventable?

The solution of these questions is a matter of the gravest consequence to mankind. Whether the facts in our possession at present are sufficient in number and adequate in bearing to enable us to solve them remains to be seen. We are certainly in a position to approach the problem with some degree of confidence. At no former period in the history of medicine has the profession had in its possession in regard to any specific disease whatever such a store of well worked out facts as it to-day holds concerning tuberculosis. This material has been collected by a host of workers in many lands, some of whom have been stirred by the brilliancy of Koch's original discovery, others by the importance of the results of their own labors in this field of pathology, all by the hope of knowledge upon which to base a rational therapeutics and an efficient prophylaxis. That such questions remain unanswered is due to many causes, among which not the least active is that conservatism which demands conclusive proof of the truth of new opinions—a conservatism, which, while it often appears to impede the progress of knowledge, in point of fact, always makes that progress the more sure.

I. IS PULMONARY COMSUMPTION HEREDITARY?

There is no difficulty about the meaning of the term. Racial, national, family characteristics are transmitted with precision from one generation to another. Physical conformation, facial peculiarities, even to little tricks of expression, the gait and bearing, are transmitted from parents to children for series of generations. The same is true of the nervous organization and the mental characters. In the domain of pathology we find the tendency to diseases dependent upon peculiarities of physical organization distinctly transmitted by heredity. Here diseases of the mind and nervous system at once attract attention; so also diathetic diseases, as gout, rheumatism, and the like. Hereditary diseases of this kind are liable to occur at any period of life, but they are especially prone to show themselves at those epochs which bring peculiar strain upon the structures weak by inheritance. Thus certain forms of insanity and functional nervous diseases show themselves at puberty and the menopause; while chronic affections of the kidneys, the skin, or the joints are apt to develop after the middle periods of life when the organs of elimination are habitually over-taxed.

But when we come to study the part played by heredity in the infectious diseases, the conditions are very different. These diseases are not due in any sense to peculiarities of physical organization; they are the manifestations of the reaction of the organism to pathogenic influences from without; they are due to positive specific infection. It is true that the infectious diseases also may be in a certain sense hereditary. They are not rarely congenital. The records of medicine show conclusively that children born of mothers suffering from the fevers, the exanthemata, and other infectious diseases, often show at birth, or shortly thereafter, the characteristic manifestations of the maternal infection. This is especially true of syphilis which Neelsen[1] has grouped along with tuberculosis, enteric fever, and leprosy in fourth group of germ diseases—namely, the mycoses with tissue proliferation or infective ulcers.

Syphilis, like tuberculosis, is a chronic disease, and affords favorable opportunities for the study of the subject of the transmission of an infection by heredity. Thus a syphilitic mother may bear in succession, so long as the infection remains active, several children presenting the manifestations of transmitted syphilis in various degrees of intensity. In these cases a child born apparently healthy, at the end of three or four weeks, without possibility of contagion, and in the absence of the initial lesion of the acquired disease, presents certain definite symptoms, symmetrical in distribution, transitory in duration, typical in evolution, polymorphic, corresponding to the secondary manifestations of acquired syphilis.

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[1] Archiv. f. Klin. Chir., 1884.

Departures from this general rule show themthemselves in two directions; on the one hand, the disease in the mother may cause the intra-uterine death of the fœtus; on the other hand, the infant may pass through the secondary stage of inherited syphilis without the manifestation of symptoms which attract the attention of its nurse. Such cases, as Hutchinson[2] has pointed out, are common, and have their exact parallels in the acquired disease. Those, however, who have shown no symptoms in infancy may yet suffer in later life. Such individuals constitute a group of cases described under the term of "late hereditary syphilis."

"It is clearly to be understood, however, that when this happens to adolescents, they suffer from a class of symptoms wholly different from those of infancy. It is not that the secondary stage has been delayed, but simply that it has been passed through without ostensible disturbance. If secondary symptoms of the kind described are to occur at all, they will show themselves in infancy, and, in a vast majority of cases, within the first three months of life.[3]"

Another very important fact in regard to hereditary syphilis must be here noted, namely, that there are no trustworthy data which indicate that the subjects of the inherited taint can in turn transmit it to their children. On the other hand, there is abundant evidence to show that those who have suffered by inheritance may become the parents of children absolutely free throughout life from any manifestations of the disease whatever. Nor is there any warrant for the assumption that such individuals inherit special proclivities to diseases in consequence of the taint of the parents. To again quote Hutchinson[4]: "There is no evidence nor probability in support of the conjecture that syphilis is in the third and fourth generation the cause of any chronic diseases of the skin or of any form of scrofula."

It is important to note, at this point, that in the fevers, the exanthemata, and in syphilis there is general infection by the blood. In each of them the infecting principle has its local point of attack, and rapidly extends to the blood.

Tuberculosis, on the other hand, is, in the large majority of cases, a local process throughout its whole course. When animals inoculated with sputum or other substances containing tubercle bacilli are killed in a short time, the lesions are invariably found restricted to the point of inoculation and the adjoining lymph glands. The tuberculous wart upon the hand of the pathologist is an insignificant local affair, which, after a time, degenerates into a fibrous nodule and then disappears. More serious inoculation wounds in the human subject give rise to local tuberculous ulcers, with implication of the lymphatic system to which the affected tissues are tributary. Gerber[5] accidently inoculated himself by a cut on the left hand in the examination of the lungs of a patient who died of consumption. Swelling of the axillary and infra-clavicular lymphatics followed. These glands, upon being removed six months subsequently by Mikulicz, were found to contain tubercle bacilli. Six months afterwards the patient was in good health and presented no signs of disease of any organ. Gerber has collected a number of cases which show the tendency to the localization of tuberculosis by wound-infection in man.

Tuberculosis of the lymphatic glands, the so-called scrofulous glands, affords another example of the limitation of the process. Such glands do not usually infect the neighboring structures, unless they undergo caseation and softening, and the capsule of the gland has been destroyed by inflammatory ulceration. The modern surgical treatment of superficial lymphatic glands that have become tuberculous, by nucleation is a practical application of our knowledge of the localization of the tuberculous processes.

Joseph Coats[6] has recorded a case in which a remarkable localized tuberculous condensation was found in the lower part of the upper lobe of a child's lung. This condensation was of a mottled appearance, due to the occurrence of caseous areas in the midst of a generally grey or red basis. There were a few isolated areas of tuberculous condensation near the large one and a patch of similar character in the other lung. Other parts of the lung were normal. On opening up the main bronchus on the affected side, there was found a small aperture in its wall communicating with a large caseous gland, which was firmly adherent to the bronchus. The advanced lesions in the gland and the recent lesion of the lungs indicated that the local implication of the lung was caused by the insufflation of virulent tuberculous matter chiefly through the main bronchus of the affected side, to some extent also upon the other.

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[2] Syphilis. Lea Bros. & Co., Philadelphia, p. 74

[3] Hutchinson, opus cit., pp. 94-75.

[4] Opus cit., p. 78.

[5] Deutsche Med. Wochenschr., No. 16, April 18, 1889.

[6] On the Pathology of Phthisis Pulmonalis, London, 1883, pp 170-172

I exhibited at the Pathological Society of Philadelphia last year a specimen of tuberculosis of the right pleura, due to the rupture of a tuberculous abscess of the vertebræ, in which there were no tuberculous lesions of the compressed lung of the affected side, nor of the left lung, nor of any other organ. The frequency with which sub-peritoneal tubercles are found in connection with the tuberculous ulcers of the intestines with the evidence of an extension by the lymphatics without tuberculous peritonitis, on the one hand, and of general tuberculous peritonitis without implication of the intestine, on the other, affords a further illustration of the tendency to localization, which is characteristic of the tuberculous processes in general.

This tendency to restriction of the tuberculous processes is also shown in the post-mortem appearances presented by the lungs in pulmonary consumption. Here we find old caseating lesions with extensive necrosis associated with more recent lesions, the distribution of which plainly indicates the extension of the process by means of infection through insufflation of the infecting material by way of the branches of the bronchial system into new portions of the lung and into the other lung. The frequency with which local obselescent tuberculous lesions are found in the lungs of individuals dying at an advanced age, shows that this local process is capable of undergoing resolution *in situ*. The progress from a focus of infection in the lungs to other portions of the lungs is not only by way of the bronchial tubes, but also by way of the lymphatic structures. The extension of the process to the other lung, to the larynx, and to the intestine are also examples of local infection proceeding step by step along continuous tissue surfaces and not by the blood.

In the words of Coats,[7] "Tuberculosis is a process in which surfaces and canals are concerned, and scarcely at all the substance of organs, except in so far as these are penetrated by channels."

The constitutional manifestations of active tuberculous processes are not directly due to the bacilli, but to toxic principles—ptomaines, evolved during their growth and multiplication. Nencki[8] obtained upon chemical analysis of tubercle bacilli substances soluble in alcohol and ether, which when used experimentally upon animals showed the presence of a tetanizing poison. This substance has not been isolated. Bonardi[9] demonstrated in tuberculous sputum alkaloidal organic bases, which, introduced into rats and guinea pigs, rapidly produced remarkable disturbances of the nervous system. This experimenter believes that these organic bases may explain the fever, sweating disturbances, of the nervous organization, and other general symptoms of the disease.

There is no evidence that tubercle bacilli multiply in the circulating blood itself. They unquestionably sometimes enter the circulation through extensive or advanced lesions, and give rise to scattered tubercles in the liver, kidneys and other organs; but nothing like an infection of the blood, such as take place in other general infectious diseases, is encountered, except in that condition known as acute general tuberculosis. Here we have to do with an acute fatal disease of brief duration, corresponding in many respects with some of the specific fevers—a disease which, as Ponfick pointed out, is due to the sudden loading of the blood with tubercle bacilli in enormous amounts. Tuberculous lymphatic glands at the root of the lung may, by extension of the process, give rise to a tuberculosis of the thoracic duct. Acute general tuberculosis develops upon the discharge of a sufficient quantity of the infecting principle into the blood. Weigert[10] has pointed out a more common source of the bacilli in the blood in this infection, namely, caseating tuberculosis of the wall of a vein, not leading to occlusion by thrombosis; and has reported three cases in which the splenic vein was involved, two in which the portal vein, one the hepatic, one the azygos, two the anonyma, one the left internal jugular, one the supra-renal, and one the thyroid. In about half the cases observed the pulmonary vein has been the vessel affected.

It is thus evident that, except in the case of acute general tuberculosis, the tuberculous diseases do not correspond in their pathology with the acute infectious diseases which are hereditary. Furthermore, demonstrable congenital tuberculosis in the human fœtus is among the rarest of pathological conditions; for a long time no example of this condition had been discovered. The view that congenital tuberculosis may be due to the semen or ovum is a pure hypothesis unsupported by proof. The opinion that it may be derived from the maternal blood by way of the placenta rests upon a small number of positive facts. Malvoz[11] found that microörganisms may pass the placenta only when it is diseased. Charrin[12] found in a seven and a half months' fœtus of a tuberculous woman, which died three days after birth, tuberculous lesions of the abdominal organs. Merkel[13] discovered cheesy nodules in the palatine arch, the lymph-glands and in the neighborhood of the hip-joint, but not in the lungs, of the child of a tuberculous woman, which died directly after birth.

It is probable that such cases of congenital tuberculosis are due to acute general tuberculosis of the mother.

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[7] Opus cit., p. 192.

[8] Cited by Hammerschlay, Correspondenz-Blatt. f. Schweitzer Aerzte, Oct. 1, 1888.

[9] Trans. Med. Acad. Pavia, March 3, 1888.

[10] Cited by Coats, opus cit., p. 253.

[11] Amer Pract. and News, Nov. 24, 1888.

[12] See Whittaker, Universal Annual of the Medical Sciences, 1889, Vol 1, p. A-4.

[13] Ibid.

Baumgarten[14] supports the view that congenital tuberculosis may be latent, with the bacilli remaining inactive in certain cases through years or throughout life, unless called into activity by traumatism or other influences. Should this view be established, it may explain, in certain cases, the presence of tubercle in the lymph glands, bones and marrow; but it will in no way invalidate the argument against the transmission of pulmonary consumption, or intestinal tuberculosis, by heredity.

In regard to the hereditary transmission of tuberculosis among the domestic animals, the statistics of the Berlin abbatoir, cited by Cornet,[15] are not without interest. Among 320,000 calves seventeen were tuberculous; among 398,000 cattle there were not less than 8,000 tuberculous.

In very young children primary infection takes place chiefly by way of the intestine, less frequently by the lungs—facts fully in accord with what is known of the mode of communication of the disease. The conclusion that enteric fever or scarlet fever is hereditary would rest upon very nearly the same basis of fact upon which the doctrine of the hereditary nature of tuberculosis has been assumed, namely, that the parents of those having these diseases have previously suffered from them, and that in a few rare instances the child of an infected mother has shown the characteristic signs at birth.

But it is not upon facts of this kind that the prevalent doctrine is based. It rests upon facts of a wholly different kind—upon facts analogous to those upon which we found our views concerning the hereditary nature of diseases due to peculiarities of physical organization and to the diatheses. Thus Thompson[16], using data obtained from the Brompton Hospital, investigated eighty family histories which were apparently complete. The total number of children in these eighty families was 385, an average of nearly five for each family. Of these, 203 were males and 182 females. Disregarding those who died in childhood, namely, 21 males and 16 females, who may or may not have been affected with tuberculous diseases, there remain 348, of whom 194, namely, 98 males and 96 females, during subsequent life developed pulmonary tuberculosis, leaving 154, namely, 84 males and 70 females, who remained exempt. The assumed inheritance was from the father in 24 cases, from the mother in 30, from both in 14, and from the *grandparents in 12.*

Theodore Williams[17], investigating cases in private practice, found that among persons affected with pulmonary phthisis the disease could be traced to relatives in 48.4 per cent. of the cases.

Hérard and Cornil found that of 100 cases not less than 38 had sprung from parents who had been tuberculous, and suggests that if to this number were added those whose *grandparents had been tuberculous*, we should probably have one-half of all cases showing hereditary predisposition.

This doctrine of heredity, which has constituted a serious obstacle to the general recognition of the infectious nature of tuberculosis, is in point of fact due to the view formerly prevalent, that pulmonary consumption was a diathetic disease, a view to which such terms as "tuberculous diathesis" and "pre-tuberculous stage of consumption," until recently in current use, bear testimony. So long as this view was entertained, statistics like those of Thompson, Williams and others had a certain significance; but if the tuberculous diseases are infectious processes, these statistics are not only wholly without value, but absolutely misleading.

If the thirty-seven children in Thompson's series who died in childhood had certainly died of tuberculous diseases shortly after birth, that fact would have been quite in accord with what we know of the transmission of infectious diseases by heredity; but that 194 of the remaining 348 should at some period of life later than childhood develop an infectious disease in consequence of heredity, is not only not in accord with the recognized laws governing the transmission of the infectious diseases, but absolutely contrary to those laws. How are we to explain the exemption of the 154 who failed to develop pulmonary consumption, and how are we to understand the hereditary transmission of an infection from the grandparents in twelve instances in which the parents escaped?

We no longer speak of the tuberculous diathesis, for we know that it does not exist any more than a typhoid diathesis or a variolous diathesis. Nor do we now speak of a pre-tuberculous stage of phthisis, for we know that patients presenting the symptoms formerly regarded as constituting that stage are in many instances already the subjects of a local tuberculosis, the signs of which have not yet made themselves manifest.

Individuals and families show remarkable variations in their susceptibility to infectious diseases. These variations are most striking in regard to the tuberculous diseases, and it must be admitted that the puny descendants of feeble, elderly or diseased parents, and especially of those who have suffered from tuberculous diseases, show deficient powers of resistance to morbid influences of all kinds and are, therefore, especially prone to tuberculosis.

But this is aside from the question. With certain variations in degree the susceptibility to the infectious diseases is almost universal. Upon favorable exposure to the infecting principle a large majority of individuals are liable to contract the continued fevers, the exanthemata, syphilis and other infections. We do not on this account, however, permit ourselves to think of these diseases as being hereditary; nor do we in any way attach importance to the hereditary nature of the common predisposition to them. Our mode of thought in regard to these diseases, and especially in regard to the relation of the whole subject of preventive medicine to them, is unhampered by considerations of this kind. In regard to the tuberculous diseases, however, the doctrine of hereditary predisposition is a stumbling block constantly in the way. It impedes us at every turn. It prevents the general recognition of the simple fact that the tuberculous diseases are infectious, against which an efficient, organized and hopeful prophylaxis not only might be, but ought to be, generally carried into effect.

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[14] Lehrbuch der Pathologische Mykrologie, 1887.

[15] Berliner Klin. Woch., No. 15, April 15, 1889.

[16] Family Phthisis, 1884.

[17] *Medico-Chirurgical Transactions*, 1871.

We may affirm that pulmonary consumption, subjected to the tests by which we determine the question in regard to the infectious diseases in general, does not appear to be hereditary in the ordinary sense, and that the congenital predisposition to the tuberculous diseases is much less general than to several other infectious diseases, notably the eruptive diseases of childhood.

2. IS PULMONARY CONSUMPTION CONTAGIOUS?

Those diseases are generally understood to be contagious in which an infecting principle, emanating from the body of the sick and gaining admittance to that of a healthy and susceptible individual, is capable of giving rise to the original disease. The mode of access from the sick to the well may be either direct or indirect, and varies with the different diseases. Thus, in syphilis we have a contagious disease communicable both by direct and indirect contact, and not otherwise; in enteric fever, a disease transmitted chiefly by contaminated drink or food; in typhus, measles and pertussis, by emanations from the body of the sick conveyed through the medium of the atmosphere.

Tuberculosis is communicable by all three methods. It was for a long time supposed that the direct communication of these diseases in the human subject by inoculation was exceedingly rare; but since 1883 a large number of unquestionable instances, of which the case of Gerber, above referred to, is an example, have been recorded. Many of these have been, like that of Gerber, due to post-mortem wounds. Others have occurred in washerwomen from the inoculation of the hands by infective matter contained in the handkerchiefs and clothing of tuberculous patients.

A number of cases have occurred during the performance of the rite of circumcision by individuals suffering from pulmonary phthisis.

It is hardly necessary to refer, in this connection, to the experimental inoculation of animals by pathological discharges containing tubercle bacilli, or by pure cultures.

There is no question at present that tuberculosis may be acquired by the use of infected food, the principal article being the milk of tuberculous cows, especially that of those suffering from tuberculosis of the udders and teats. Whilst the flesh of tuberculous animals, especially when properly cooked, is not liable to cause tuberculous diseases in those who partake of it, there is abundant proof of the fact that tuberculous sputum itself, either alone or mixed with other food, and tuberculous viscera, will give rise to tuberculosis in animals that eat them, either by chance or to whom they have been administered experimentally.

The primary infection by way of the intestinal tract, frequent as it is in childhood, is notably less common than infection by way of the respiratory surfaces.

It has for some time been suspected that the spread of pulmonary. phthisis is largely due to the inhalation of particles of dried sputum, or other material containing tubercle bacilli or their spores, disseminated through the atmosphere. This suspicion, which long lacked the support of definite facts, is now fully confirmed. Cornet[18] has shown that dust collected from the walls of 147 different hospitals, insane asylums, private houses occupied by consumptives, and from crowded streets, contained in forty instances tubercle bacilli; in sixty-nine it was, however, free from them; and in the remainder, the death of the animals used in the experiments being quickly brought about by the action of other bacteria, the result was not conclusive. The dust from twenty-seven rooms not occupied by consumptives showed no tubercle bacilli. Even in the apartments of severe cases bacilli was not discovered, save in those instances where the patients expectorated into handkerchiefs or upon the floor; and in no case did the dust of the walls prove to be infectious where spitcups were habitually and exclusively used, although tubercle bacilli were abundant in the sputum.

Later investigations by Cornet[19] strongly support the conclusion that infection occurs chiefly through dried sputum floating in the atmosphere and drawn into the lungs by the inspired air.

The results of experimental studies in regard to the etiology of tuberculosis are opposed to the generally accepted view that the lungs are the seat of an especial predilection for the development of the tubercle bacillus. The preponderance of pulmonary consumption over other forms of tuberculosis is to be explained by the greater exposure of the organs of respiration to the infection.

The experiments of Naegeli and others show that air passing over a moist surface does not take up bacilli or spores. For this reason, Cornet concludes that it is absolutely impossible for the air passages, tuberculous cavities, or the expectoration, so long as it remains moist, to render the expired air infectious. It must be admitted that under very exceptional circumstances the consumptive becomes dangerous by means of his moist expectoration, and the relation between the young infant and the consumptive mother or nurse affords peculiar opportunities for this means of communication. The writer has at present under observation an infant suffering from pulmonary and intestinal tuberculosis, developed at the age of 3 months, who was at that time taken care of by a phthisical nurse, who was in the habit of placing the nipple of the nursing-bottle in her mouth, to test the temperature of the milk before administering it to the child. The older sister of this child, its parents, and grandparents upon both sides, are living, absolutely free from the evidence of tuberculous disease of any kind, and in good general health. When, however, the expectorated matters become dried, they are capable of dissemination through the atmosphere in the form of fine dust bearing bacilli and spores. Dessication is a necessary requirement, and the most favorable conditions for such dissemination are found within doors. Wet weather and a moist atmosphere are unfavorable. The fact that the disease is most frequent in crowded quarters supports the view of the dissemination by means of the dried sputum.

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[18] Zeitschrift für Hygiene V Band.

ier Klin Wochschr, 1890, Nos. 12, 13, 14, 15.

Flick's[20] investigations in Philadelphia, which showed that 90 per cent. of infected houses had an infected house adjoining them, and that 33 per cent. of the infected houses supplied more than one case, warrant the conclusion that consumption is communicated by contact, by association, or by living in close proximity. This observer has pointed out the important fact that pulmonary phthisis conforms to the laws which govern the spread of contagious diseases in other respects. The grouping of the cases is the same, and the localization is influenced by the age of those predisposed to the disease. Consumption prevails in circumscribed epidemics, which, for the reason that the disease is of long duration, are less noticeable than epidemics of the ordinary contagious diseases which run their course rapidly. In a later article, Flick[21] has published investigations which shed much light upon the subject of house epidemics, and the persistence of the infection in houses.

Liebermeister[22] supports the view of the communication of the disease by the dissemination of dried sputum, and has observed many cases where previously healthy families became infected, one after another, after removal to a house formerly occupied by a tuberculous patient. From this point of view, the infection of several members of a household previously free from the disease, in the course of a few months or years after the introduction of a case, becomes intelligible. So also the development of the disease in married couples, and in those who nurse relatives suffering from it.

The high percentage of mortality from consumption in prisons, 30 to 40 per cent. of the total deaths, and in cloisters, often exceeding 50 per cent. among persons collected from all quarters, finds ready explanation in the doctrine of contagion.

Cornet[23] has shown by an elaborate analysis of statistical material supplied by the official records of the German Government that the opinion, very generally entertained, that nurses are not especially liable to tuberculous infection, is incorrect. The records investigated relate to thirty-eight cloisters, and extend over a period of twenty-five years. Among 2,099 deaths, almost two-thirds, namely, 1,320, or 62.88 per cent., were due to tuberculosis. He further shows that the general death-rate is remarkably increased among the nurse classes in the cloisters, and that the age of greatest mortality among nurses in general is very much earlier than in other occupations, namely; ranging from the twentieth to the fiftieth year of life, and that the principal agency in determining these results is the dominant prevalence of tuberculosis. The other infectious diseases, especially enteric fever, occupy a second place.

The enormous prevalence of tuberculous disease among monkeys, and other animals confined in zoological gardens, must be attributed to contagion. These animals are not subject to the tuberculous diseases in their wild state, and therefore bring into captivity no special hereditary predisposition, but simply a general liability to tuberculosis.

The researches of Cornet show that the distribution of the tubercle bacillus is by no means so wide as it was formerly thought to be. Koch has shown that, aside from artificial culture, it is capable of growth and multiplication only in the bodies of men and animals. The fact that it retains its vitality for an indeterminate, but for a long period of time outside of the body, is well recognized.

Developed in animal organisms, it is eliminated from them, and disseminated, only by means of the discharges containing it. It is ordinarily found, therefore, as Cornet has abundantly proved, only in the immediate neighborhood of tuberculous men and animals; and the development of morbid processes, which are due to it, and it alone, can be accounted for in no other manner than by its direct or indirect transmission from an infected to a healthy and susceptible animal organism.

To sum up, the tuberculous diseases respond in every important particular to the tests by which we determine the contagiousness of the other infectious diseases. Tuberculosis is transmitted by inoculation, by direct contact, by means of food and drink ingested; finally, by means of the inspired air.

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[20] The Contagiousness of Phthisis, Phila., 1888.

[21] The Times and Register, June 1, 1889.

[22] Deutsche Med. Wochschr., June 18, 1888.

[23] Zeitschrift für Hygiene, Band vi, 1889.

The more serious objections that have been urged against the view of the contagiousness of these diseases, and especially of pulmonary consumption, are due to the influence of the long prevalent view that they were manifestations of an hereditary diathesis; to the fact that until within a few years their infectious nature, now demonstrated, was unknown; and finally, to the immunity of a large proportion of individuals in communities where they are rife. This last objection loses much of its force in view of the definite facts recently brought to light in regard to the restriction of the tubercle bacillus to the neighborhood of infected individuals, and in regard to its mode of dissemination.

3. IS PULMONARY CONSUMPTION PREVENTABLE?

If pulmonary phthisis were hereditary in the ordinary sense, any hope of preventing it would be chimerical. If the views hitherto entertained in regard to the peculiar manner of its hereditary transmission can be shown to be correct, even the theoretical possibility of diminishing the extent of its prevalence would be beyond hope. What measures of prophylaxis could be exerted against the transmission and spread of an hereditary disease, capable of showing itself at any period of life, in individuals presenting from childhood all the appearances of health? or against a disease, not only liable to transmission to the third or fourth generation among those suffering from it, but liable to be transmitted through a generation or two entirely free from it?

The recognition of the infectious nature of tuberculosis deprives views of this kind of even the semblance of truth, while increasing knowledge of its pathology restricts the part played by heredity, in the transmission of the disease, to extremely narrow limits. As, however, the importance of heredity diminishes, that of contagion asserts itself more strongly in the face of cherished traditional beliefs and deeply rooted prejudices. In contagion alone can we find a consistent theory of the spread of the disease, and an intelligible explanation of the very facts to account for which the theory of heredity has been strained beyond reason.

The offspring of tuberculous parents, who are born manifestly tuberculous, die in a short period, and are not likely to communicate the disease. It has been asserted that children of tuberculous parents, born with latent tubercle bacilli, may suffer later in life from tuberculosis of the marrow, bones, and lymph glands. It is more probable that such persons have acquired the infection in infancy, and that its latency is due to a high degree of individual immunity. Even accepting the view of Baumgarten, this group of cases does not constitute a danger of the spread of tuberculosis so long as discharging lesions are absent. Direct inoculation, as in kissing, using the same handkerchief, and so on, is probably a rare accident, and is likely to become more so as its danger becomes more widely known. This, however, is especially a danger to the infant cared for by a tuberculous mother or nurse.

Direct inoculation by sexual approach in cases of genito-urinary tuberculosis is a theoretical danger not supported by recorded facts. The urine and fæces in cases of tuberculosis of the kidneys and bladder and of the intestines, are, owing to the disposition of such discharges and the scanty bacilli which they contain, not sources of danger. The same may be said in regard to the discharges from tuberculous sinuses. Inoculation, by way of superficial lesions of the skin, of the hands of washerwomen is an occasional occurrence. All these methods of communication are obvious and are easily preventable; they are of secondary, almost insignificant, account in the etiology of the disease.

The chief avenues of contagion are the digestive and respiratory tracts. Tuberculosis is acquired by infected food, and by the inhalation of air containing tubercle bacilli and spores. Communication by these methods is recognized only upon careful scientific demonstration. It is preventable only by concensus of opinion and concerted action in any given community. Individual effort is practically without effect. Notwithstanding the fact that in theory the spread of pulmonary phthisis is preventable, it remains to be seen to what extent it may be carried out in practice. Those will accomplish most in the work who most clearly realize the fact that in the tubercle *bacillus* we have the entity which constitutes the infecting principle. The rigid inspection of all cows in dairies and of all animals slaughtered for food, and the destruction of those found to be infected, would constitute the chief measure of prophylaxis as regards the infection by food. A second measure of much importance would be the systematic care of all milk until consumed, preventing all access of air or dust to it; and regulations against the employment of consumptives in dairies, meat shops, and other places where food is prepared and sold.

Measures of prophylaxis of this kind would come properly under the care of the Government, and uniformity and efficiency throughout the whole country could be secured only by the action of the General Government of the United States.

Reduced to its simplest form, the problem of prophylaxis against the spread of the tuberculous diseases among human beings consists in the proper care of the fresh expectoration of consumptives. Not dangerous when moist, it becomes, when dried, a fruitful—in fact, the chief means of the spread of the disease from the lesions of which alone it is derived. The sputum of those suffering from pulmonary phthisis should under all circumstances be collected in suitable vessels, and kept in a moist condition, until it is either destroyed by fire or discharged into sewers under such conditions as will insure its conveyance to places where it is not likely to become a source of danger. Spitting upon the floor or in the street, or into handkerchiefs or towels should in all instances be avoided. Patients should be required not only to use in their rooms and in the house a suitable cuspidor, but to carry with them pocket spitcups in which to collect the discharge.

A cup has recently been devised, and is sold in the shops in this country, which consists of a small metal frame in which a folded paper cup is set. When a quantity of sputum has accumulated, the paper can be removed and burnt with its contents. Detweiler[24] has designed a pocket spitcup or flask to meet the uses of consumptives. It is of glass, flat in shape, with metal fittings tightly closing.

Want of space stands in the way of an extended discussion of the details of the prophylaxis, the object of this paper being simply to indicate the general principles upon which it is to be based. The subject has, however, since the publication of Cornet's important communications, attracted widespread attention. A series of regulations have been issued by the President of the Police Board in Berlin,[25] and a report, embodying the general facts bearing upon the matter, and a practical set of rules, drawn up by Prudden, Biggs, and H. P. Loomis, Pathologists of the New York City Health Department, has been transmitted to the Board of Health of New York.[26]

These gentlemen refer to a fact which may act as a motive to consumptives not otherwise inclined to follow out obvious measures of prophylaxis. The fact is expressed in the following terms: "An individual, who is well on the road to recovery, may, by self-inoculation, if he do not with the greatest care destroy his sputum, diminish greatly his chances of recovery."

The early recognition and treatment of pulmonary consumption constitutes in itself an important measure of prophylaxis as tending to circumscribe or retard the extension of the lesions and thereby diminishing the amount of expectoration. In this connection it is necessary to allude to the importance of communicating to the patient the true nature of his disease at an early date. Much is to be gained, not only on the part of the patient, but also on the part of the public, by the disuse of the conventional euphuisms, "slight bronchitis," "local trouble," etc., by which it has been customary to conceal as long as possible from the patient and his friends the true nature of his complaint. As the question stands to-day, the ease of diagnosis, the hope of cure in a considerable proportion of the cases, and the necessity of individual and general efforts of prophylaxis render such a course imperative. Nor need the knowledge of the nature of his trouble bring dismay to the patient nor demoralization to his household. He should be made to understand from the beginning that, though a source of danger to his friends, he is only a source of danger in proportion as he neglects the precautionary measures by which danger may be effectually averted.

It is not to be hoped that even the widespread recognition of the mode of communication of tuberculous consumption and the means by which its spread may be prevented will be followed by any very rapid diminution in the prevalence of the disease. We have seen in late years the beneficent results of antisepsis in the diminution of surgical infections and puerperal diseases. The hope that the frightful prevalence of pulmonary phthisis may in the near future be restricted is no longer the vain dream of the visionary; that hope now rests upon a scientific basis, and its realization constitutes to-day the most serious practical problem of preventive medicine.

DR. STOCKTON took issue on one point, *i. e.*, diathesis. He had observed a single case of tuberculosis occurring in an orphan asylum, in which no other child was ill. Why should this child be the subject of an attack? There must have been some lack of resistance. It seems so evident that there is something besides mere contagion that the cause may be classed, 1, contagiousness; 2, non-resisting soil.

DR. SOLLY thought he had seen in Colorado strong evidences of the contagious character of tuberculosis. He found it occurring in all individuals, and that it would attack any one upon the slightest exciting cause.

DR. HERRICK thought that the question ought not to be accepted absolutely as it is by the profession. There still seem a large number of facts inexplicable. It may be due to mental deficiency on his part, but it will require a great deal of additional proof to make him believe that the disease is contagious. Has it stood the test of therapeutics—have we made any advance in discovering a specific antidote for any disease?

DR. S. SOLIS-COHEN said that the last speaker need not fear being accused of mental deficiency so long as the greatest medical mind of the century, Dr. B. W. Richardson, of London, occupied the same position of wholesome skepticism. It would be a mistake to assume that the infective action of microbic parasites is the sole cause of consumption. There are other parasites—the entozoa, which, descending from non-parasitic organisms, have through the circumstances attending their evolution taken upon themselves the parasitic cycle. As Dr. Vaughan's investigations proceed in the one direction to determine in what way bacteria are toxic, so we may look in the other direction to see which preceded chronologically, the microörganism or the disease, alike in the life of the individual and in that of the race. May we not conceive that their evolutionary history is like that of the entozoa—that, originally innocuous, they found in the degenerated tissues of disease a favorable environment, and thus took up their parasitic cycle, gaining perhaps a certain power of carrying infection. I do not deny their infective power, but I do submit that the evidence of their sole power of originating disease is not conclusive. The evidence as to consumption seems to me to indicate an hereditary diathesis, an heriditary failure of nutrition, and that upon this bacillary tuberculosis becomes engrafted as an epiphenomenon.

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[24] Therap. Monatshefte, May, 1889.
[25] Medical News, May 25, 1889.
[26] Medical Times, June 8, 1889.

Dr. John A. Cutter said: Till bacteriology cures consumption, it cannot take the first place. In the Transactions of this Association for 1880 is an article by my distinguished father, Dr. E. Cutter. In it are given the records of seventy cases of consumption, twenty-six of which are cures. This paper was based on twenty-four years of practice.

Koch's bacillus was known to be associated with vinegar yeast thirty years ago by cryptogamic botanists. It is found in lager beer drips, bread, etc. In blood it is found with the spores of vinegar yeast, which by their size and chemical action produce tubercle. This statement is based on the examination of healthy and diseased people's blood. To be more concrete: A young woman whose father and sister had died of tuberculosis and whose uncle had been cured of this same disease sent us some sputum two years ago, and in it were found elastic and inelastic lung fibre. We wrote her that her lungs were breaking down, and that she was curable. She went on treatment and has had many ups and downs due to adverse circumstances, but one month ago, her family physician examined her and said "he must succumb to the fact" that "her lung was healed." I am treating cases of consumption right along; I believe they can be cured and do see them cured. I am thankful for all bacteriology has done, but it is young, it does not cure its cases, and as a term it does not cover the ground of blood morphology.

In tuberculosis, the blood has the morphology of sticky, ropy masses of red corpuscles, enlarged fibrin filaments, distended white corpuscles with spores of vinegar yeast, and in the serum are to be seen the same vinegar yeast spores, free and in masses. These masses of vinegar yeast, when detained by the lungs, form by their chemical mechanical action tubercle. This yeast comes from the bowels, and is produced there by the fermentation of starches and sugar.

The treatment aims to stop the fermentation by the feeding of non-fermentative foods and proper medication. The patient is watched by studying the blood, urine and fæces. So long as there are any masses of vinegar yeast in the blood, so long is the patient in danger of lung necrosis. When the blood has become healthy, then nature has a chance to attach the lung and heal it, and it has been our experience that by incessant, ceaseless watching, by most careful diet and medication, even cases with cavities have been cured and are alive to-day.

The greatest value of the study of the blood morphology in consumption is the ability to find positively the spores of vinegar yeast in the blood before there is any cough. Lastly, in cases of great destruction of lung tissue and when death is imminent, the amount of vinegar yeast in the blood is the greatest, some of the masses nearly covering the whole field.

Dr. Wilson, in conclusion, remarked that in reference to Dr. Stockton's remarks he would say that there are cases as incapable of explanation as a single case of typhoid in one locality. The tubercular nature of the disease has been determined. The fact that the view is not favored in all quarters should not stand in the way of its acceptance. Those who do reject the doctrine have none to offer in its place.

MORBID PERFORATIONS OF THE NASAL SEPTUM.

Read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, held at Newport, June, 1889.

BY A. B. THRASHER, A.M., M.D.,
OF CINCINNATI, O.,
PROFESSOR OF LARYNGOLOGY IN CINCINNATI POLYCLINIC.

Nearly two years ago my special attention was directed to morbid perforations of the septum narium by meeting with a case in a friend and patient of my own. I had grown to regard nearly all such perforations as of syphilitic origin, but in this case I knew that syphilis did not exist as an etiological factor.

I now give a brief history, bearing on this point, of the cases which have since fallen under my observation in my private practice. My cases at the Cincinnati Polyclinic bear in the same general direction, but I desire more time with these to verify my points before offering my conclusions to the profession. I have endeavored to eliminate from these histories everything which does not in a manner bear upon the etiology of the disease. Through negligence I have at times failed to record all data, but where there is a doubt as to a fact I leave it unrecorded.

Case 1.—Miss D., æt. 14. Family history renders syphilis probable; has always had delicate health and much throat and nose trouble. Consulted me for aphonia, due to ulceration of vocal bands. Half of epiglottis eaten away by a sloughing ulcer. Large cicatrices over posterior pharyngeal wall, which by contraction had drawn the velum much out of place. Has had pain in the nose, and about one year ago noticed a slight falling of the bridge of the nose. Now has a perforation of septum the size of a silver quarter, embracing cartilage and bone. Both lower turbinates absent.

Treatment local and antisyphilitic.

Case 2.—Mrs. L., æt. 28. Family history good, previous health good; married for two years; had miscarriage eighteen months ago, at two months, from unknown cause; gave birth to a healthy child four months ago.

Was under my treatment for acute follicular tonsillitis one year ago, at which time the septum was intact. Three months ago had pain in nose, more especially about the bridge, with occasional attacks of epistaxis. Her general health at that time was bad, as she made a "bad recovery" from child-bed. She is now feeling better, but has much pain in nose and an offensive purulent discharge from both nares.

Examination revealed a ragged perforation of septum one-half inch in diameter, with necrosis of left lower turbinate. The perforation involved the anterior border of vomer, apparently having begun at the junction of the bone and triangular cartilage.

The family physician, a gentleman of education and large experience, assured me that there was no suspicion of syphilis on either side of the family. The child is perfectly healthy and has never exhibited any symptoms of syphilis. However, to give the patient the benefit of the doubt she was put on constitutional as well as local treatment, and in two months she was about well.

Case 3.—Miss S., æt. 26, a lady of excellent reputation and no family or antecedent trouble pointing toward syphilis. She consulted me for acute follicular tonsillitis. In making my routine examination of nose I discovered a perforation of the cartilaginous septum of the size of a silver dime. The opening had smoothly cicatrized edges except a slight ulceration under a crust adhering to the upper border for one-quarter of an inch. There was a history of occasional "colds in the head," with some mild attacks of epistaxis but no pain in this region. The patient had no previous knowledge of the perforation. The slight ulcer healed rapidly under local treatment.

Case 4.—Mrs. McK., æt. 46. Has two healthy living children, the youngest 12 years of age, and never had a miscarriage. Has had nasal catarrh for years, with frequent and distressing bleeding from nose. Never had any sores in mouth or throat, or any skin symptom.

Family doctor says no syphilis on either side of the family. Consulted me for hypertrophic rhinitis. Examination revealed a small perforation, one-third of an inch in diameter, of cartilaginous septum. The upper posterior quarter of opening was ulcerating. The ulcer healed slowly under local treatment alone.

Case 5.—Mr. H., æt. 28, married; one healthy child 2 years old. Wife has had no miscarriages. Has never had syphilis, "although would not hesitate to tell me, if true." Has been troubled for two or three years with a crust forming over the septum, which he had been accustomed to remove by picking with his finger-nail. The removal in this manner was occasionally followed by slight hæmorrhage. There was now a perforation as large as a goose quill of the cartilaginous septum, the posterior edge of which was slightly ulcerated, the ulcer being covered with a dry crust. There was no pain felt at any time in this region. The ulcer healed rapidly under local treatment.

Case 6.—Mr. S., æt. 27, single. General health good; no history of syphilis, or any of its symptoms. For a year has had crust formations over left side of septum, which he has been in the habit of picking off with his finger-nail. Pain has never been a feature of the case. Examination revealed a dry brown crust on the cartilaginous septum. The removal of this crust disclosed an ulcerating surface half an inch in diameter, sloping in gradually from the circumference until the centre had penetrated two-thirds through the cartilage. The ulcer healed slowly, and in three months cicatricial tissue covered the depression made by the eroding ulcer. The treatment was simply local.

Case 7.—Mr. H., æt. 31, married; two children, both healthy; never had syphilis. Consulted me for hypertrophic rhinitis. On examining the nose I discovered a perforation one-third of an inch in diameter of the cartilaginous septum, which he thought he had caused by picking the nose too much. There was no ulceration at the time, nor during the two following months, when he was under treatment for the hypertrophied turbinates. There had never been any pain in connection with the case.

Case 8.—Mr. S., æt. 26, single; family history tubercular. Six years ago had several chancres which he called syphilis. Took medicine for three months and has never had any other symptoms of this disease. Has had occasional attacks of epistaxis for years and crust formations in nose, which he had involuntarily removed with his finger-nail. Examination revealed a small perforating ulcer of cartilaginous septum. There had never been any pain connected with the ulceration. The ulcer rapidly cicatrized under local treatment.

Case 9.—Mr. McC., æt. 46, married, with three healthy children; family history good; general health perfect; no probability of syphilis. Consulted me for irritation of throat of short standing. Has had occasional brief attacks of bleeding from nose. Examination revealed a ragged perforation half an inch in diameter of cartilaginous septum. He had no idea that there was the least nasal difficulty. The ulcer healed kindly under local treatment.

Case 10.—Mr. K., æt. 44, married and has four healthy children; family history good; never had syphilis or any symptom; was flour inspector by profession, which necessitated snuffing all grades of flour. Consulted me for laryngitis and cough. Examination revealed an opening half an inch in diameter through the cartilaginous septum, with one-quarter of the circumference still ulcerating and covered with brownish crusts. Did not know anything was the matter with nose. The ulceration healed kindly under local treatment.

Case 11.—Mr. P., æt. 50. Consulted me for an acute pharyngitis. I then discovered a small perforation of triangular cartilage of septum, which he claimed had been present "for years." There was no indication or history of hereditary or acquired syphilis. The perforation had never given rise to any trouble.

Case 12.—Mrs. H., æt. 40, widow; one healthy child; no miscarriage. Consulted me for follicular tonsillitis. Routine examination of nose revealed a small perforation of septal cartilage, which she affirms that she distinctly remembers was present when a child "under ten years old." She remembers to have examined other children at that time to see whether there was a like condition. No history or evidence of syphilis. It has never created trouble.

Case 13.—Mrs. J., æt. 30; suffering now from constitutional syphilis; has necrosis of bone and cartilage of septum, with destruction of right inferior turbinate; has severe pain over bridge of nose and frontal sinus. Put on constitutional and local treatment.

Case 14.—Mr. W., æt. 31, married; two healthy children; never had syphilis; has been troubled with formation of crusts on septum ever since a youth; has always removed this crust with finger nail; has had no pain, but occasional slight hæmorrhages. Several years ago, while removing this crust as usual, was much surprised and frightened by pushing his nail entirely through the septum, since which time the perforation has slightly increased in size. It has not perceptibly enlarged for three or four years. The slight ulceration at the edge healed rapidly under local treatment, but occasionally he drops into my office with a recurrence.

Case 15.—Miss C., æt. 15; family history good; no suspicion of syphilis. Consulted me for acute follicular tonsillitis. Examination of nose revealed a small perforation of cartilage of septum, of the existence of which she was ignorant. The edges were cicatrized, and of course the condition had occasioned no trouble.

Local treatment in these cases consisted in, (*a*) when necessary, cleansing the surface of all secretions and crusts; (*b*) cauterizing the ulcer with a 25 per cent. solution of argentum nitras, chromic acid, trichloracetic acid, or the galvano-cautery, and (*c*) the application of a mild disinfectant, as Seely's yellow oxide of mercury ointment, 1 per cent. of resorcin in vaseline, or 5 per cent. of white extract of pinus canadensis and 1 per cent. of carbolic acid in vaseline. When there was present necrosed bone, this was carefully removed with forceps and curette. The constitutional treatment was addressed to the supposed underlying dyscrasia.

From an analysis of these cases it will be seen at a glance that three were unquestionably syphilitic; eleven were probably non-syphilitic, and I have placed cases 2 and 8 in the doubtful column. In case 2 the lady's husband was a commercial traveler, and thus might have contracted the disease and conveyed it to his wife without the knowledge of the family physician. The fact that her child is healthy and that she has no other manifestation of the disease speaks strongly against the syphilitic theory. In case 8 there was a history of several small sores, pronounced by a doctor to be syphilitic, a month's constitutional treatment per os, and no subsequent symptoms. The multiple character of the lesion, together with the absence of any following suspicious symptoms, would point toward a soft sore rather than to a Hunterian chancre. However, I place this with case 8 in the doubtful list.

In the three syphilitic cases the perforation involved the osseous as well as the cartilaginous part of the septum; indeed, it is probable that the periosteum was attacked simultaneously, or nearly so, with the soft tissues. In case No. 2, doubtful, were present exactly the same conditions. In each of these four cases one or the other of the turbinated bones had become affected and pain in the bridge of the nose was observed, which symptom was absent in all the other cases. While no pain at all was felt in twelve of the cases, it is well to remark that in no case was there pain in the ulcerated area of the septum. The application of the cautery gave rise to no feeling of pain, showing a well developed localized anæsthesia. In this respect the ulcer might be called lupoid, but the other characteristics of lupus were wanting.

It is true that the number of cases is hardly large enough to give much value to deductions therefrom; yet this is a full report of all private cases of this character coming to my office for over twelve months. In these fifteen cases which I have the honor to report the following facts will be easily recognized:

First.—A large majority of these cases of perforation of the septum were non-syphilitic.

Second.—The majority of the cases were giving rise to no trouble, and needed but simple local treatment.

Third.—The prognosis in every case was favorable with treatment; in the majority of cases, favorable without treatment.

DR. CARL SEILER, of Philadelphia: I am in full accord with Dr. Thrasher in saying that perforation of the septum is not by any means a symptom of syphilis, but is most frequently caused by either scratching or by the action of chromic acid introduced into the nasal chamber, either in chromate of potash factories, or more frequently by physicians as a means of reducing anterior hypertrophies.

CLINICAL OBSERVATIONS ON SOME CASES OF A PECULIAR CHARACTER.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY CARL SEILER, M.D.,

OF PHILADELPHIA.

For over three years past I have observed a large number of cases which exhibited unusual symptoms, both at the commencement of the disease and during its course, and, as the disease finds its expression as far as I have observed it, mostly in the upper air passages, I may be pardoned for bringing the consideration of this new disease or this unusual variety of an old disease before the Section, although it belongs perhaps more properly before the Section on General Medicine. I must also apologize for the delay in reporting my observations, which delay was caused first by the fact that at the last meeting of the American Medical Association I learned that my esteemed friend Dr. W. C. Glasgow had made similar observations and was preparing a paper on the subject, and that I did not want to anticipate him; and second, I was desirous of getting a better insight into the nature of the disease by further observations. My friend has, however, up to the date of writing disappointed us, for no paper by him on his observations has appeared as far as I am aware, and I feel that I have collected sufficient data to warrant me in calling the attention of the profession to this very prevalent and peculiar disease in a more detailed manner than I did a few months ago in a short verbal communication to the Philadelphia German Medical Society, and in the third edition of my "Handbook on the Diseases of the Throat and Nose." I will not presume to give a name to this apparently new disorder, nor can I give any reasonable etiology to account for its epidemic appearance among all classes of a community and for its widespread geographical distribution; all I can do is to describe the symptoms as I have observed them in many cases and the result of the treatment instituted to combat them. The symptoms exhibited by, what I consider to be, a typical case of the disorder, are as follows:

The patient, apparently in perfect health, is suddenly attacked by a severe pain of a neuralgic character, most commonly in the back, shooting upward toward the neck and apparently through the trunk to the chest; less frequently this pain is described as a severe otalgia, or it takes the form of severe pain in the arms or legs. Only in very few cases the patient stated that he had had a chill. This pain usually lasts from six to twenty-four hours and then disappears, although I have seen one or two cases where the pain lasted for weeks. During this period of pain no rise in temperature and no acceleration of the pulse is observed, but the patient complains of extreme weakness.

The next symptom complained of, in the majority of cases which I have seen, is a sore throat, which on inspection shows the mucous membrane of the pharynx, velum palati and pillars to be swollen and of a yellowish red hue with here and there streaks of the lighter color. The tonsils appear enlarged and often covered with patches of a thin white film, which closely adhere to the mucous membrane and may remain unchanged for days and even weeks. There is none of the intense redness of the mucous membrane which is seen in the ordinary acute pharyngitis and tonsillitis, and in diphtheritic or croupous inflammation. An incision into the apparently œdematous swelling of the mucous membrane yields no serum but a straw colored tenacious mucoid material which can be drawn out in threads of considerable length. In a few cases I have seen similar swelling and patches of pseudo membrane extending to the larynx, and in one case the only part affected was the subglottic cavity. I have also seen these lesions in the nasopharynx and in the anterior nasal cavities. A removal of the pseudo membranous patches discloses no ulcerated surface beneath, but may cause a slight bleeding of the spot thus denuded. They are at first quite thick and remain for a long time (in one case seven weeks) but become gradually thinner, until at last they greatly resemble a mucous patch on the mucous membrane. They never become discolored nor turn up at the edges and are never spontaneously dislodged and thrown off. An incision does not decrease the swelling of the mucous membrane.

The patient complains usually of but comparatively little pain in the throat and deglutition is not as difficult and painful as might be supposed, nor is the dyspnœa in the laryngeal cases, which I have seen, very pronounced, yet there is an anxious expression of countenance as of impending evil and a dulness of the eyes quite characteristic. In many other cases the mucous membrane of the upper air passages is, however, not affected, and the focus of disturbance seems to be located in the alimentary canal or in the mucous membrane of the bronchial tubes. In the first instances symptoms of gastric intestinal catarrh show themselves which often closely resemble typhoid fever. As a specialist I have seen but few cases of the latter class, but Dr. Glasgow, of St. Louis, has seen quite a large number of the abdominal form, and Dr. L. M. Hildreth, of Lyons, Nebraska, in a letter on the subject states that in about 50 per cent. of the cases observed by him (nearly 200) the mucous membrane of the upper air passages was the focus while in the other cases no signs of tonsillitis or pharyngitis were present.

Together with the appearance of the lesions in the mucous membranes a rise in temperature is noticed which not infrequently runs up to 104° while the pulse is but slightly accelerated rarely going above 100. The diurnal exacerbations of temperature occur usually in the middle of the day and night and the fluctuations between the highest and the lowest temperature are very slight, usually not more than one degree. Together with the febrile symptoms loss of appetite is noticed, and the bowels usually become constipated. The back of the tongue is furred with a yellowish fur, but remains moist and the tip and edges are usually clear. The debility increases from day to day until in the severer cases the patient is so weak that he cannot turn over in bed or move his arms.

At the same time, that is about the third or fourth day from the onset of the disease, the glands nearest the seat of the focus of irritation become involved, so that in the pharyngeal form the submaxillary and parotid glands are swollen and hard, and gradually the whole chain of lymphatic glands down the neck become involved.

In some cases suppuration of some of these glands ensues.

I have not been able to observe any definite duration of these symptoms, as they gradually disappear at different intervals of time from the onset of the disorder in different cases, but the tendency is toward a recurrence and an indefinite duration of the weakness of the muscular system. In a few cases of the abdominal form I have noticed a continuance of the rise in the temperature after all other symptoms had disappeared and the pulse rate had returned to its normal standard.

Convalescence is usually very slow, the patient gaining in strength only very gradually, and it often requires many months before his health and vigor are completely restored. The tendency of the disorder is toward recovery or a chronic continuance of some of the symptoms rather than toward a fatal termination, although I have met with two cases of death in about five hundred cases, and Dr. Glasgow has met with a greater number. He was fortunate enough to be able to get post-mortem examinations in some of the fatal cases at the St. Louis Hospital, and found that the only lesion which he could discover was numerous ecchymoses on the surface of the intestinal mucous membrane and no sign of ulceration or enlargement of Peyer's patches. In the two cases which died under my observation I could not obtain the consent of the family to make a post-mortem examination, but the immediate cause of death, to judge from the symptoms immediately preceding the fatal termination, was heart failure. Careful examination of the urine in a large number of cases showed no trace of albumen nor any abnormal condition of the fluid, indicating that the kidneys are not affected. In no case have I observed any sign of paralysis following the pseudo membranous exudation upon the mucous membrane of the tonsils, pharynx or larynx.

I have observed, however, numerous cases of what seems to be a chronic form of the disorder, which exhibited symptoms slightly different from the acute form, inasmuch as there is no swelling of the mucous membrane, nor are there any patches of pseudo membrane, but there is a peculiar yellowish red hue visible particularly on the velum, pillars and posterior wall of the pharynx. The most prominent symptom is extreme weakness and lassitude, together with a slight elevation of temperature and a tendency to neuralgic pains after even the slightest exposure to cold or draughts of cold air. In these cases in which there is a tendency toward relaxation of the nasal turbinated tissue, occlusion of the nasal breathing channels occurs after the slightest mental or physical exertion. Constipation alternates at irregular intervals with slight diarrhœa, and somnolency with insomnia. A very peculiar feature is that in these chronic cases which may have lasted for months, we may see an outbreak of the acute form, with all the symptoms described before. Dr. Bermann, of Washington, has observed two such cases of this recurrence of the acute disorder after several months duration of the chronic form.

As far as I have been able to learn by private information and correspondence with medical friends, the disorder has been observed in every portion of the United States from Maine to Washington Territory, and as far south as New Orleans, and it is not more than three years since it was first observed.

The etiology of this disese, which seems to be undoubtedly epidemic, because of the large number of cases observed by individual observers in different localities during a short space of time, is as yet unexplained, and owing to the failure of obtaining any definite results from culture experiments, at least in Philadelphia, I will not venture to express an opinion, except that I am convinced by clinical experience that it is infectious but not contagious.

In regard to the treatment of these cases, very little is to be said. My experience has been that all the drugs usually prescribed in cases similar in nature, together with topical medication are useless or even worse. Quinine, digitalis, aconite, antipyrin, salycilic acid, iron, chlorate of potash, etc., all have either no effect or increase the discomfort of the patient. The only drug which I have used for the last year at the suggestion of Dr. Glasgow, is benzoate of soda, and it has proved in my hands almost a specific for the disorder. Five grains of the benzoate of soda, given every hour, with a tablespoonful of whiskey or brandy every four hours, and absolute rest, will, as far as my personal experience goes, break up an attack of this disorder within forty-eight hours from the onset and restore the patient to perfect health, while in the chronic cases the patient rapidly improves under such treatment. As the benzoate of soda in often repeated doses has of late been recommended by some German writers as a specific for diphtheria, it is possible that this disorder exists also across the ocean, and has there as well as here been mistaken for diphtheria, for in several cases of undoubted diphtheria under my observation the drug was of absolutely no avail.

To sum up, the symptoms of the cases observed by me have been:

1. Neuralgic pains, usually in the back and chest, and often in the head, ears, and limbs.
2. Extreme debility.
3. Mucoid infiltration of the submucous tissue and the formation of thin white pseudo membranous patches on the surface of the mucous membrane.
4. Absence of febrile symptoms at first, and later high temperature and relatively low pulse rate.
5. Absence of albumen in the urine and liability of heart failure.
6. Gradual melting away of the pseudo membranes and the absence of any odor from them.
7. The wide geographical distribution in this country, and the infectious but not contagious nature of the disorder.
8. And, finally, the specific action of benzoate of soda in relieving all symptoms promptly.

Since writing the above, I have learned that [illegible] Glasgow has read an exhaustive paper on his ical [illegible]vations at the late meeting of the American "Hand[illegible]ological Association in Washington. But as I was unfortunately prevented from being present at that meeting, I am not able to quote from it and am obliged to let this paper stand as the record of independent observations on my part.

DR. THRASHER said he had seen a number of cases which he had not at the time named, which presented symptoms somewhat resembling the cases reported by Dr. Seiler. He was rather of the opinion that he had had to do with a complication or combination of diseases, or even with several entirely different diseases rather than with one uncomplicated affection. Diphtheric poison has at times lodged in the tonsillar lacunæ and remained dormant for a long time. Scarlatina is at times so disguised as to present some such symptoms. He thus thought that after a time, this disease might be separated with two or more distinct affections. Dr. T. had in a few of his cases used salol with apparently good effect.

REPORT OF A CASE OF ECTOPIC GESTATION TREATED WITH GALVANISM.

Read in the Section of Obstetrics and Diseases of Women at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY WM. H. TAYLOR, M.D.,
OF CINCINNATI, OHIO.

The great practical importance of extra-uterine pregnancy, and the prominence it now has as a topic for discussion, justify the belief that any contribution, however humble, will be of interest. But, in asking your attention to the details of a case with the above title, it is with the hope that I may elicit information from you, rather than with the thought of imparting knowledge to such a company as now honor me with their attention. I am fully impressed with the fact that the diagnosis of ectopic gestation is difficult, and therefore the first essential interest centres about this point. And, since the experience of one man is not likely to be sufficient to allow him to make dogmatic assertion, I shall preface the report of my case with brief extracts from the latest published utterances upon this subject.

T. Gaillard Thomas, in the "American System of Gynecology," says: "The most reliable rational signs (of ectopic pregnancy) are these, engrafting themselves upon the ordinary signs of a normal pregnancy.

"1. Sanguineous flow of greater or less persistency.

"2. Occasional gushes of blood occurring without assignable cause and disappearing without treatment.

"3. Iliac pain, sometimes extending down the thighs.

"4. Paroxysmal pelvic pain.

"5. Symptoms of abortion attended with expulsion of pieces of decidua, without expulsion of a fœtus.

"6. Recurrent pelvic inflammation suddenly recurring.

"7. As the fourth month is reached symptoms of pressure, as if from a retroverted gravid uterus, frequent micturition, etc.

"If, in a pregnant woman who presents in her symptoms the peculiarities just mentioned, there be discovered in the pelvis a mass of ovoid shape on one side of or behind the uterus, which is slightly movable and tender upon pressure, and which obscurely gives the impression that it contains fluid, the probabilities are very great that ectopic gestation exists. . . . If the passage of an interrupted galvanic current of twenty cells produces, within forty-eight hours, a flaccidity of the mass, a general improvement in symptoms, and a sudden arrest of the progressive signs of pregnancy, this probability becomes as much a certainty as diagnosis often is in cases of disease attended by some obscurity."

Dr. Joseph Price, at the recent meeting of the American Association of Obstetricians and Gynecologists, said the symptoms are:

"First, partial or complete cessation of menstruation for one or more periods, generally accompanied by other rational symptoms of pregnancy, though occasionally these are all wanting.

"Second, pain which is peculiar, being generally severe, paroxysmal and long continued. . . . These pains are apt to subside for a time only to recur.

"Third, the appearance of uterine hæmorrhage, which is again peculiar in that it is usually irregular, both as to time and quantity, ... and containing shreds of tissue which are portions of the decidua vera."

Greig Smith closely concurs with the views just expressed, and John Strahan, M.D., to whom has just been awarded the Jenks prize for an essay on the subject of extra-uterine pregnancy, says: "A rounded, elastic, semi-fluctuant, tender tumor behind and to one side of a slightly enlarged and laterally displaced uterus, if found to be rapidly increasing under circumstances which permit the possibility of extra-uterine pregnancy, could hardly be mistaken for anything else. . . . If in a week or two the extra-uterine swelling had increased considerably, and shreds of decidual membrane had come away with the metrorrhagia, the case for tubal gestation would be all but complete. . . . If we happened to have most of the symptoms of even early pregnancy present, and a vascular, growing, semi-fluctuating tumor at the back or side of an enlarged uterus, with suspension of the menses for a time or two, and then irregular hæmorrhages, with severe crampy pain, the diagnosis would be evident to the simplest."

Having thus called to mind the important data of an early period of ectopic gestation, allow me to place my case in comparison therewith, that you may be able to compare the grounds upon which my diagnosis was based.

The case which I submit as a text for discussion came under my care in January last, with history as follows: Mrs. W. has borne three children, the last two and a half years ago, since which time menstruation has been normal until recently, and she has been in good health. She menstruated in September, and the period which should have commenced October 18 was missed altogether. The patient noticed abnormal desires for food which led her to suspect pregnancy. October 30 she had a slight discharge of mucus tinged with blood, which continued at intervals till November 15, the amount and character varying; when the flow was slight it was dark and offensive. For about two weeks she grew better and attended to her household duties, but Nov. 29, without obvious cause, she was seized with intense pain in the lower part of the abdomen, which compelled her to remain unmoved in a semi-flexed position till carried to her bed. She vomited violently; she had intermittent pain (supposed to be uterine), with a free flow of blood. The phenomena of shock were so marked that for twelve hours death seemed imminent. Her physician, Archibald Crary, M.D., of Hartford, W. Va., wrote that, although an abortion was expected, the os uteri was not dilated. Her highest temperature was 99°. In four days she was much improved in all respects, and the flow of blood had ceased. December 13 she discharged what she says her physicians called fœtal membranes, since which time she has lost no blood.

December 20 she had a second attack of violent pain, not so severe or protracted as the first, with no flow of blood. Since the beginning of her trouble she has been subject to brief severe pains in the left iliac region, produced by any exertion.

Her physician wrote to me that he suspected extra-uterine pregnancy. I saw her first January 3, 1889. She was spare, seemed mentally and physically depressed, thought she had lost some flesh, though she was positive the upper part of the abdomen was growing larger. She had no mammary signs of pregnancy, though perversion of appetite continued. Abdomen tender to touch, pain increased by deep pressure, no tumor detected by palpation, auscultation negative; by vaginal examination uterus deflected to left, os patulous, apparently not much enlarged, but since introduction of sound caused great complaint of pain, the cavity was not well explored. To the right of uterus and apparently loosely connected with it was a firm, irregularly oval mass, the size of the folded hand; the mass was slightly movable and not very tender. From the history given me this tumor had grown during the past few weeks; complained of feeling of pressure on rectum.

During the ensuing two weeks the continuous current was applied six times by means of ball electrode in vagina, and twice with sponge on surface of abdomen. But, since vesication occurred, a large wire gauze was substituted. From eight to twenty cells of Waite & Bartlett's battery were used, and, under anæsthesia, the current was carried to 125 milliampères. A very remarkable effect mentioned by the patient was that from the commencement of her sickness her extremities had constantly been cold and clammy, but from the first application of the battery they had grown warm.

She left the city January 19, at which time her general health was much improved and her normal appetite had returned.

February 25. The tumor has decreased, is not painful. Uterus somewhat retroverted.

April 11. She has gained in weight, has no pain, menstruation is as well as before her trouble began.

Mr. President, having thus placed before you the facts, I am not inclined to weary you with deductions. You are well aware of the diversity of opinion that exists as to the relative value of electricity and laparotomy in the early treatment of ectopic gestation. Granting the correctness of the diagnosis, I feel warranted in claiming success by the former treatment in my case.

TOPICAL TREATMENT OF DIPHTHERIA AND CHEMICAL SOLUTION OF THE MEMBRANE.—SUBSULPHATE OF IRON AND SALICYLIC ACID.

BY A. W. NELSON, M.D.,
OF NEW LONDON, CONN.

The *New York Medical Journal*, January, 1874, published "Forty Cases of Diphtheria Treated by Local Application of Sulphate of Iron." The present writer in that paper says: "About 1865 I became confident that some local treatment would best cure the disease, and often wondered what chemical re-agent would destroy and counteract the source of fever, the putrid mucus, pseudo-membrane, continuously exuding, and at the same time not cauterize and irritate the still living, although infiltrated, membrane of the throat. . . . Creosote suggested itself to be considered (this was just before the carbolic acid discovery or invention), but it was not tested. Another agent, the subsulphate of iron, Monsel's styptic, in some now forgotten way was brought to notice. My first application to the throat in diphtheria determined with me its efficiency, etc. . . .

"You will sometimes induce a little vomiting at first, an effect not injurious—on the contrary, possibly beneficial in ridding the stomach of poisonous mucus swallowed before, etc."

The tincture of chloride of iron has usually been given, 3 to 10 drops in a *little* water, with the local application of the subsulphate, and this line of general treatment has undoubtedly largely prevailed, in this country at least. Dr. Whittaker, Cincinnati, 1881, gives nineteen cases treated in the same manner, with circumstantial detail. THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Nov. 30, 1889, commends the local treatment editorially, and in the treatise, "Diphtheria and Intubation," by Drs. Billington and Dwyer, 1889, the first topical application named is Monsel's styptic.

Prudden, in his exhaustive paper, "Etiology of Diphtheria," (*American Journal of Med. Sciences*, May, 1889,) advises local applications without indication of the agent. In the same number D'Espine (*Rev. Méd. de la Suisse Romande*, No. 1, 1889) advises irrigation with a dilution of salicylic acid, 1 or 2 in 1,000, or in infants, 1 in 1,000 or 1,500. Several mixtures have been used, as also pepsin and tripsin, to effect solution, sometimes with good results, according to reported cases.

In a large number of diphtheritic throats with enlarged glands of the neck, there is much necrosis of the membrane and fetor, and little doubt of the nature and specific origin of the disease. The best men may sometimes be deceived in the milder cases. The subsulphate application, however, is very effectual in both the severe and mild forms.

Not as frequently we observe a different condition—a diphtheritic membrane firmly attached in the fauces, whitish and blueish, not necrosed, without fetor, gradually spreading from tonsil to velum and uvula and palatal arch, and behind and beyond sight in the post nares. The living internal structures sometimes are slightly swollen; the lymphatics of the neck, as I have observed, considerably swollen. Great weakness and apprehension accompany this condition, and the usual remedies have little effect.

There can be no doubt here as to the specific nature and origin; nor can there be much doubt that it is the same in specific nature as the pseudo-membrane of croup. Here the two diseases meet and become identical, except in location.

About a year since my attention was attracted to the use of salicylic acid in solutions and ointments for corns of the feet. I tested the pure acid several times, especially in the troublesome soft corns between the toes. The part was moistened once a day and the acid rubbed in for a few days. The hypertrophied tissues would grow smaller and disappear, and sometimes the epidermis near would desquamate, but without soreness of the underlying derma. The effect was quite perfect.

Case 1.—April last I had a case of diphtheria, and it occurred to me to apply the acid pure. It was applied hourly to the patch on the tonsil, where it *stuck* from hour to hour, enveloped in the moisture of the parts, but gradually thinning the deposit and limiting its extent. It was the child of very poor parents, and after three days the mother reported such improvement that it was not again seen. The child recovered soon.

Case 2.—June 4. L. J., girl, æt. 8; well-marked membrane over one tonsil, with slight necrosis of deposit only; enlargement of lymphatics of neck; some fever; no appetite. Powder of salicylic acid hourly, and ℞ tinct. ferri chloridi ʒiv, hydrarg. bichloridi, gr. ij, ♍; gtt. iij in a teaspoonful of water every hour or two; acid every two hours at night. Continued nine days, with occasional intermissions of some hours, when the membrane would again appear, again to melt under the acid. No extension of the membrane while the acid was used. No complaint of the peppery stinging of the remedy. Towards the last, after disappearance of membrane, used also, ℞ bismuthi subnitratis ℥ss, olei minthæ piperis, ♏ vj, ♍. Make a fine powder. Dust the throat every hour or two.

For a little space beyond the part affected by the membrane the salicylic acid whitens the mucous surface, but without inconvenience and without any invasion of the disease. The surface soon again recovers. The little patient was seen daily twice from June 4th to 11th, and to 13th once daily, and last on the 15th. No sequences.

Case 3.—Sept. 4. Mrs. H., æt. 33; considerable fever; enlarged glands of neck; weak; patch on one tonsil and near it.

℞. Tinct. ferri chloridi ʒiv and hydrarg. bichloridi, gr. ij, ♍, gtt. iv in aqua ʒj hourly or two-hourly. Acid applied every hour or two; sometimes not so often. Complains of its stinging; membrane constantly recurs upon omission of acid. Finally applies remedy hourly with regularity, when the throat is no longer painful and the acid does not sting, and the deposit thins and disappears.

Mrs. H., a woman of intelligence, did not at first like the remedy, but seeing its benefit in the appearance and the lessened sensitiveness of the affected parts she became enthusiastic and thoroughly coöperated. She was visited twice daily for about nine days till Sept. 12th, when the tendency of the membrane to recur ceased. The bismuth mixture was then used with comfort.

A solvent of the membrane without irritation of the living structures *seems* to be found in the salicylic acid—much better than the subsulphate, whenever the membrane does not necrose and break down. The subsulphate hardens, in that way killing the acting membrane, rather than acting by solution. Creosote might act well but for its tendency to extend deeply.

The question of destructive action upon bacteria has not been discussed. It can in these instances be affirmed without discussion, and the treatment is considered from a different standpoint.

Hourly use of the acid, which is a very light powder, does not affect the youngest patient unfavorably by the amount swallowed or absorbed.

FACT *VS.* FICTION TOUCHING YELLOW FEVER INOCULATION, WITH A RECORD OF RESULTS WELL AUTHENTICATED.

BY J. McF. GASTON, M.D.,
FORMERLY A RESIDENT OF BRAZIL.

The discussion of the claims of inoculation with the attenuated virus of yellow fever for the prevention of this disease or the mitigation of the access, should it be developed, resolves itself now into a consideration of facts. No further argument in regard to the principle upon which inoculation is based seems requisite for the proper understanding of the data which have accumulated illustrating its results. The only question likely to be made is respecting the correctness of the statistics and the trustworthiness of the reporter. But observing the rules which ordinarily determine the value of evidence it will be seen that quite a number of witnesses corroborate the statements of the original experiments. If the observations made and recorded by different individuals at different times and different localities, coincide in the points which substantiate the efficacy of yellow fever inoculation, no reasoning as to the theory of propagation, can invalidate the conclusions. True science deals with facts and not with theories, so that we must accept the evidence of those who report facts unless the credibility of the witnesses is impeached.

As no interested motives can be attributed to the many Brazilian physicians who have recently investigated the process of inoculation introduced by Dr. Domingos Freire in Brazil, I will present the testimony as published in the Brazilian newspapers.

A fitting introduction to the report of observations from the city of Campinas, in the province of S. Paulo, is afforded by a letter addressed to the editor of the *Gazeta de Noticias*, of Rio de Janeiro, on May the 12th, 1889, of which the following is a literal translation:

"I ask of you the kindness to insert in your valuable paper the accompanying letter from my distinguished colleague, Dr. Angelo Simões; who has labored so diligently in Campinas for the active propagation of inoculation against the yellow fever.

"By this letter it will be seen the same favorable results obtained here in the capital, as also in Nictheroy, Santos, Vassouras and Desengano, are being splendidly verified in the ill-fated Campinas; and I only regret that this was not done earlier for security against such evils and misfortunes. In due time I will publish the general statistics which place in evidence all the facts which militate in favor of the prophylactic measure, that from 1883 in four epidemics have clearly shown its value. In the meantime, while I recognize the support given by the press, a great part of the population and my colleagues; the ill-will of some, the ignorance and indifference of others have been obstacles to its general adoption, as is requisite for a complete effect of a preventative recourse which experience has fully sanctioned.—Dr. Domingos Freire."

Following is the letter referred to above:

"CAMPINAS, May 7th, 1889.

"I received your letter of the 2nd inst. and with it the culture liquid. I have vaccinated up to date 630 persons and I think none remain to be vaccinated. I have gone through almost all the streets and meet only either those already vaccinated or individuals who have been attacked. One or another has refused to be vaccinated, but almost all have accepted it. I have proceeded with the greatest caution; I do not vaccinate those who have had the disease, nor those in the incubatory stage. I think, then, that the portion of the population not attacked by the disease have been vaccinated; and the new cases which are few, that are appearing in individuals who do not wish to avail themselves of this prophylactic, without counting one or another vaccinated, who has had the disease mildly.

"When the epidemic is ended I will prepare the statistics here for publication, for which I ask permission, presenting succinctly passing events without omitting anything.

"Withall I do not expect my labor to end with this. I intend to vaccinate, perhaps on a grand scale, those who return to the city with a view to protect them from the disease during the next year.—Dr. A. Simões."

It is proper to state that my home in Brazil for a number of years was at the city of Campinas, and hence the facts connected with this outbreak of yellow fever among the people of this place, and the result of the use of inoculation for the arrest of the epidemic have a peculiar interest.

I have to assure my colleagues that what is herewith presented for their consideration is worthy of credit.

I cannot render a better service to the true history of inoculation than to present a few of the many notices which are recorded in the files of the newspapers of Campinas which are in my possession. These are sent by friends living in that section who have taken no part in the discussion of the merits of inoculation as a preventative of yellow fever.

The *Correio de Campinas* of April 25th, 1889, contains the following statement:

"VACCINATION AGAINST THE YELLOW FEVER.—The distinguished physician Dr. Domingos Freire vaccinated yesterday in the Misericordia Hospital 34 persons, who went there to secure immunity from the terrible epidemic.

"Besides this many persons were vaccinated in their own houses.

"Dr. Domingo Friere was assisted by the noted practitioner, Dr. Angelo Simões, who continues to aid the great scientific investigator.

"We continue to recommend to the people a resort to vaccination as the only preventative against the yellow fever.

"If all would avail themselves of that sure prophylactic, Campinas would be free from this great scourge in a few days."

We extract from another issue, May 1st, 1889:

"Vaccination against yellow fever continues to be well received by the people.

"Yesterday, Dr. Angelo Simões, assisted by the pharmaceutist Soares da Camara, vaccinated 62 persons, completing the number of 510 who have been vaccinated.

"Up to the present time there is no notice of any of the persons vaccinated being attacked by the epidemic."

It is unnecessary to multiply this list of publications, but there are two points of importance which may be noted in the statements made:

"All the persons who have resorted to that preventative measure are in excellent condition, not one of them having been attacked by the epidemic.

"It is notable that on the day following the vaccination almost all the subjects perceive symptoms of fever, more or less marked; this fever, however, disappears without the use of any medicine."

I may state that among the names of those vaccinated, many of my former acquaintances are recognized, who would be incapable of practicing any deception in this matter.

Those of my colleagues in this country who have known anything of my antecedents will not attribute to me a purpose to mislead them in regard to the facts developed by the large number of vaccinated having escaped unhurt, while others were dying around them. The great publicity given to the vaccination in the large hospitals and churches, with the records of the names and dates, affords an additional assurance of the trustworthiness of the statistics. It is not any longer requisite to send a commission to study this process from a scientific standpoint, but we have simply to accept or reject the testimony.

The result in the city of Campinas, in the province of S. Paulo, is shown by a telegram on May 3rd, 1889, as follows:

"Dr. Angelo Simões, aided by the pharmaceutist Camara, has vaccinated more than six hundred persons by the process of Dr. Freire, having obtained excellent results. The epidemic is declining rapidly. The population is satisfied with the result of the vaccination."

This is taken from the *Gazeta de Noticias*, of Rio de Janeiro, and another telegram is published in the same paper from Campinas, May 11th, as follows:

"Of the seven hundred vaccinated up to the present time only two have died of the yellow fever, yielding therefore an excellent result of this prophylactic measure."

For the information of the profession as to the effects of inoculation upon the subjects, the following report is translated from a newspaper of Rio de Janeiro, *O Paiz*. It is by Dr. Urias A. da Silveira, author of "Brazilian Therapeutics," dated at Barra Mansa, August 29th, 1889, and addressed to Dr. Domingos Freire.

"Considering of utility, the two cases of vaccination against yellow fever done by you upon two persons of my family in your office at 68 Rosario street, as statistical elements, I come spontaneously to bring them to your attention.

"I present faithfully the facts as observed by me:

"*Case 1.*—D. M., 36 years old, sanguine, nervous temperament, enjoying perfect health, vaccinated 3:30 P.M., July 25th, 1889. General condition: At 6 P. M., hot flushes; at 8 P. M., the temperature in axilla 37.7 cent.; at midnight 38.1 cent.; at 6 A. M. on 26th, general sweat without any medication and reduction of temperature to normal.

"Pains of the limbs, especially the lower extremities, frontal headache, vertigo, congestion of conjunctiva with running from eyes, slight yellow tint of conjunctiva perceptible to all. This followed by discomfort for twenty-four hours and tendency to drowsiness.

"Diminished appetite, urine scanty and high-colored, of which a sample is presented.

"At the outer and upper third of the left arm, where the injection of 1 gram of the culture liquid of the attenuated micrococco xanthogenico was made, there was observed six hours afterwards a red spot, of a congestive nature and slightly swollen, painful to the touch and pain increased by any movement. This spot continued for thirty hours, becoming then paler, less painful and less swollen. It gave place subsequently to a greenish-yellow discoloration, which disappeared after the seventh day.

"*Case 2.*—N. N., 14 years old, nervous lymphatic temperament and in perfect health.

"The same local and general phenomena described above were observed with little modification, but more marked and accompanied with nausea and abundant flow of saliva. In both the signs of general disturbance preceded those of the localized lesion on the arms. The reunion of these signs in harmony and their development, demonstrates the results of abortive cases of yellow fever or that the symptoms correspond to it.

"Having these two facts of great significance, based on what I have learned from your elaborate work upon the vigorous method employed in the culture of the germs of yellow fever, and the attenuation of their violence, with due regard to what all bacteriologists practice, I am convinced that to you belongs the palm of victory for the discovery of the immediate cause of yellow fever and of the means of preventing it, with like benefit as the cow-pox in variola.

"A vaccination by the attenuated virus of yellow fever by the process of Freire is, in my humble opinion, the most efficacious hygienic measure of the present day, as it is the greatest factor employed for the extinction of yellow fever, already endemic in Brazil. Without it, fruitless and useless will be whatever means are employed to protect large cities. They may have the merit of diminishing their epidemic explosions but not to extinguish them entirely, as will occur if both should be employed together.

"Allow me, in conclusion, to express with frankness my opinion upon your process. It is that the vaccination of Freire is beginning to enter upon the scale of consummated facts, as one of the grand conquests of science over the greatest scourge of humanity.—Dr. Urias A. da Silveira."

In connection with these data relative to yellow fever inoculation from various sources, calculated to impress the medical profession with its efficacy, I will give a translation of the statistical report of the results in different portions of Brazil from 1883 to 1889, recently published by Dr. Domingos Freire. While there have been announcements in the medical journals and in the newspapers of the United States, to the effect that Dr. George M. Sternberg has investigated this matter and pronounced an unfavorable decision in regard to the process of inoculation adopted by Dr. Freire and the results obtained by it, this matter is now submitted to the thinking man as a reality.

"Statistics of preventive inoculation against the yellow fever.

"The epidemic of yellow fever which was developed in Rio de Janeiro during 1888-89, and was propagated to various places in the interior of Brazil, serves to demonstrate for the fourth time the prophylactic value of vaccinations by means of the attenuated microbe of this disease.

"It was between the months of December and March that the epidemic attained its greatest intensity; in the month of May of 1888 the first sporadic cases appeared, and the last in June, 1889. We inoculated in this period 3,520 persons, of whom 988 were strangers and 2,532 Brazilians. Distributed thus: Rio de Janeiro, 2,138; Campinas, 651; Vassouras, 199; Nitheroy, 163; Santos, 133; Desengano, 102; Serraria, 80; Rezende, 54. The disease prevailed with great intensity at all these points.

"Among the 2,532 Brazilians are found 1,680 that correspond very much to the 998 strangers, because in this number are embraced not only individuals coming from the interior and residents of this city for less than six years, but likewise children are included, which are proven to have a susceptibility similar to strangers themselves.

"The percentage of mortality was 0.79 among those who were vaccinated. In Santos, Rezende and Serraria the immunity of the vaccinated was complete. The percentage of each locality was the following: Rio, 0.98; Campinas, 0.46; Vassouras, 0.5; Nitheroy, 0.75; Santos, 0; Desengano, 1.9; Serraria, 0; Rezende, 0."

Let us see now the mortality from yellow fever among those not vaccinated. It was 4,115, distributed as follows:

"Rio, 2,407 (including the sick of the Maritime Hospital of Santa Isabel); Campinas, 812; Vassouras, 15; Nitheroy, 177; Santos, 650; Desengano, 22; Serraria, 21; and Rezende, 11.

"Of the 4,115 there are about 2,800 strangers who died, being 1,176 in this city (Rio de Janeiro); 750 in the Maritime Hospital; 63 in Nitheroy; 500 more or less in Santos; 300 more or less in Campinas; 7 in Desengano; 3 in Rezende; 3 in Vassouras.

"The deaths of Brazilians make up one-fourth, who for the most part have not been habituated to the virus, being in localities where the scourge has never before broken out.

"With a view to illustrate the efficacy of the inoculations, let us record the ratio adopted by Dr. Jemble in Senegal. He verified that among the strangers residing there from one to three years, 75 out of 100 are attacked with yellow fever and 66.6 out of 100 die of it. Let us make application of these proportions to our vaccinated strangers or natives, that resided in the infected district from a few days to three years.

"There were inoculated in Rio de Janeiro 1,183 persons under the conditions mentioned, and of these, the deaths should have been at least 591. Behold! only 18 died; so that 573 lives were spared. In Campinas, a city never visited previously by yellow fever, the whole of the 651 vaccinated may be considered as newcomers. Among these the deaths should have been 325, whereas there were only 3, and these were Brazilians, with complete immunity of 152 strangers.

"Likewise in Vassouras there should have died 5, while there was only one victim. In Nitheroy there should have been 5 deaths among the 11 strangers under the above conditions, yet there was but one fatal case among those vaccinated. In Santos, in the list of 57 individuals under the same conditions, 28 should have succumbed, yet there was not a single case of death amongst our inoculated persons in this city. In Desengano the two unfavorable results were of strangers who had resided there six and eight years. In view of the fact that the disease prevailed in that place for the first time, all of the 102 inoculated may be reckoned as susceptible in like manner as recently imported strangers. It might have been expected that at least 51 should have perished.

"In Serraria, making a similar calculation, 39 should have died, whereas the immunity was absolute. In Rezende the 54 inoculated should have furnished 27 fatal cases, as the disease had not appeared there previously, while in this city there was complete immunity.

"GENERAL SUMMARY.

"From 1883 to 1889 we inoculated 10,474 persons with a mortality of 0.4 per hundred. From 1883 to 1884, 418 inoculations; from 1884 to 1885, 3,057 inoculations; from 1885 to 1886, 3,473 inoculations; from 1888 to 1889, 3,532 inoculations. Total, 10,474 inoculations.

"The inoculations were interrupted during 1887 on account of my visit to Europe and the United States, where I went to present the result of my efforts, which happily were well received.

"It is proper to note that with a view to avoid the criticisms of the ill-disposed, I have authenticated the results obtained this year; and I have the documents relating to the inoculations, all signed by eminent physicians, many of them sanitary authorities, by the members of municipal councils, by police officers and by many other distinguished and trustworthy persons. Would that this could have so happy an exit in the minds of those who are charged with the most precious of all interests—the health and the life of the people.—Dr. Domingos Freire.

"Rio, October 2, 1889."

With much labor and painstaking, these data have been collected and recorded, without any other object than the vindication of truth by facts. I am convinced that influences have been brought to bear upon the public mind in this country, which have prevented an impartial judgment in regard to the merits of this process of inoculation as a prophylactic against yellow fever. But with the report of such varied observations and statistics as are here presented, I am convinced that the members of the medical profession will not any longer shut their eyes to the overwhelming weight of testimony in favor of the protection afforded by this measure.

If our sanitary authorities will take steps to test yellow fever inoculation as it has been done in Brazil, all controversy will be ended by the realization of its protective agency in the arrest of yellow fever in our Southern cities.

MEDICAL PROGRESS.

ACTINOMYCOSIS. — O. BUJWID reports seven cases of actinomycosis observed by him in three years. The first two cases occurred in a young printer and his betrothed. The abscesses which had formed were incised, cleansed and dressed antiseptically. Up to the present time, eighteen months after the operation, there has been no return of the disease. The third case occurred in a chimney sweeper. In this case also the abscesses were opened and scraped out, but from time to time the disease recurred. In the last year the writer has observed three other cases similar to the ones already described, and one case of cutaneous actinomycosis of unknown origin occurring in a chimney sweeper. In the writer's opinion the treatment should be of a radical character, though the prognosis, even in cases where there is abscess formation with mixed infection, is not unfavorable.—*Wiener Med. Woch.*

O'DWYER'S INTUBATION OF THE LARYNX.—GUYER reports (*Cent. für Klin. Med.*) the results of intubation of the larynx, as performed in the Children's Hospital of Zurich. Up to the end of May, 1889, the operation had been performed on account of acute laryngeal stenosis in twenty-seven cases. Of these thirteen recovered, of which two were infants, aged 8 and 13 months respectively; the remainder varied in age from 2 to 8 years. In all these cases the diphtheritic character of the stenosis was proved by the affection of the larynx and by the membrane coughed up. In all the cases the stenosis was so severe that there was only a question of choice between tracheotomy and intubation. In the fourteen cases which died the cause of death in eleven cases was extensive bronchial diphtheria; in two, pneumonia; in one, nephritis. In most of the cases the children were able to dispense with the tube after five or six days. In four cases in which removal of the canula gave rise to bad symptoms its replacement was followed by excellent results. The reporter believes that intubation will not supplant tracheotomy, but merely limit its applicability.

TREATMENT OF DIABETES.—DR. ROBIN has made some interesting observations of patients suffering from diabetes, in which he carefully examined the chemical composition of the urine and studied the influence of various substances upon it. He reaches these conclusions: Biological chemistry shows that in diabetic patients there is not only an exaltation of the various processes of nutrition, but also an increased functional activity of special organs, chiefly the liver and the nervous system. In consequence, this undeniable increase in the functional activity of the general nutrition and of the hepatic cells, brought about by a direct or reflex nervous irritation, must be made the point of departure for the therapeusis of diabetes. *A priori* one may be sure that any remediable measure which in any wise retards the general changes, or those of the nervous system, will certainly lessen the glycosuria. Still, there is a prospect of success with a remedy only when it exercises its restraining influence upon the general changes by means of its primary influence upon the nervous system, and when it does not act too powerfully upon the functions of this system. The therapeutical remedies which impair nutrition must be banished, for it has been clinically as well as experimentally proven that they do not yield useful results.

The therapeutical indications in diabetes are as follows:

1. One must remove from the organism, by means of suitable diet, the materials that form sugar, and deprive the liver cells of the substance that gives rise to their functional irritation.
2. One must restrict the excretion of assimilated materials and the formation of glycogen by means of therapeutical remedies which check the chemical processes of organic life by means of their primary action upon the nervous system.—*Inter. Klin. Rundschau.*

CREOLIN IN GYNECOLOGY.—Extensive experiments have been made by CHÉRON (*Annals of Gynecology*) with creolin in 2 and 5 per cent. solutions. The weaker solution was used for vesical injections in cases of gonorrhœa. Neither poisoning nor pain resulted; the discharge from the urethra diminished and soon disappeared, injections being made every other day. Gonorrhœal vaginitis was quickly improved by irrigation of the vagina and vulva with the 5 per cent. solution. In purulent cervical endometritis the diseased tissues were first carefully cleansed with absorbent cotton, after which an application of the 5 per cent. solution was made. After a few applications the suppuration ceased. Creolin gauze was found to be an excellent substitute for iodoform gauze in cases of suppurative and hemorrhagic endometritis in which a tampon was required. From the foregoing it was concluded that creolin has a very positive effect upon the microbes of gonorrhœa and of pus, and that in ordinary doses it is neither painful nor toxic.

ALCOHOL IN PUERPERAL FEVER. — DR. A. MARTIN, of Berlin, reports (*Internat. Klin. Rundschau*) his experience with alcohol in the treatment of eighteen cases of puerperal fever. Of these eighteen patients, all of whom were very ill, some of them, indeed, moribund when the treatment was begun, five died, three of them only from the infection. The amount of alcohol administered was enormous; thus, one of the patients took in six weeks seventeen bottles of cognac, thirteen bottles of Burgundy, 37 half bottles of champagne, four and a half bottles of other heavy wines and six bottles of porter. At no time was there any alcoholic intoxication observable. In some cases, in connection with the alcohol other measures were employed, such as the removal of the decomposed decidua, irrigation and permanent drainage. In the treatment of the fever the usual antipyretics must be given, as this is not influenced by the alcohol. In this regard Martin does not agree with Breisky and Conrad that the action of alcohol is that of an antipyretic; but, on the contrary, he seeks to obtain by it an increased heart's action and an increase in the patient's power of resistance against the infection. Martin recommends a closer observation of this method of cure, which should not, however, be overestimated.

DIETETIC TREATMENT OF CHRONIC BRIGHT'S DISEASE.—In a series of experiments under varying conditions upon healthy persons and those afflicted with diseases of the kidneys, DR. J. SCHREIBER endeavors to solve the problem whether patients with chronic nephritis should be nourished with food rich or poor in albumen. This question, as is known, has been answered by Senator and by Semmola in the latter sense. According to the reporter's experiments, it appears as though the opinion of Senator and others, that food rich in albumen exerts an injurious effect upon cases where there is no albumen present, is incorrect. The ingestion of large quantities of raw eggs with food rich in nitrogen does not lead to albuminuria in healthy individuals, or in those disposed toward albuminuria. A mixed diet rich in nitrogenous elements, with coagulated or fluid albumen added to it, does not lead to increased excretion of albumen in the urine of diabetic patients; indeed, it often diminishes it.

The reporter offers two observations from Leyden's Clinic to prove that the milk diet insisted upon by Semmola does not influence the absolute quantity of albumen in the urine. The reporter concludes that inasmuch as Bright's disease is one of the affections that lead to gradual and generally progressive exhaustion of the forces, the diet should be of a most comprehensive character; the forms of diet should be altered to meet the exigencies of each case.—*Inter. Klin. Rundschau.*

GLYCERINE ENEMATA.—In order to discover the laxative action of glycerine, C. LÜDERITZ has experimented upon rabbits, in which the effects produced by the enemata were observed through the opened abdomen. After the injection of a moderate quantity of glycerine, a little transparent fluid soon appeared in the rectum around the fæces, and gradually became apparent throughout an extent of 15 cm. from the anus. At the same time the mucous membrane became more injected, and energetic movements were seen in it, which had the effect of forcing downward the contents of the intestine. These movements were only manifested in the presence of the fluid referred to. In some cases the intestinal movements were not powerful enough to overcome the action of the sphincter, and no evacuations occurred; in the other cases evacuations took place without visible intestinal movements. The action of the glycerine, therefore, is a local one, confined to the portion reached by the glycerine. The reporter is of the opinion that the action of the glycerine in man is explained in the same manner.—*Centralbl. f. Klin. Med.*

BUTYLCHLORAL IN TRIFACIAL NEURALGIA.—Butylchloral appears to possess, besides its diaphonectic action, a certain specific influence upon the trigeminal nerve, which can be anæsthetized throughout its entire course by an internal dose of from 1.0 to 3.0 grm. of this agent. Prof. LIEBREICH (Berlin) gives the following formula for neuralgia of the trigeminus.

℞	Butylchloral.	3.0–5.0 grm.
	Alcoholis rectificat.	10.0 grm.
	Glycerinæ	20.0 grm.
	Aq. dist.	120.0 grm.

S. Two to four tablespoonfuls at a dose.

—*St. Petersburger Med. Woch.*

IMPORTANT IN FUMIGATION.—DR. SQUIBB, of Brooklyn (*Medical News*), in a recent address on sulphur fumigation in the prevention of infectious disease, directed attention to the important fact that, in the absence of moisture, the penetrating power of sulphuric acid gas is only slight, and for this reason there should be an abundance of aqueous vapor in the apartment in which the sulphur is burnt. Boards of Health neglect to emphasize this fact, which is not known to the laity. The *Medical News* recommends that water be kept boiling in the room in which gas is being generated. Dr. Squibb also called attention to the relative uselessness of chlorine gas as a disinfectant in the absence of aqueous vapor.—*The Pacific Record.*

INFLAMMATION OF THE LUNGS AS THE RESULT OF THE DECOMPOSITION OF CHLOROFORM BY GASLIGHT.—ZWEIFEL observed in a series of laparotomies which he was obliged to make by gaslight in a badly ventilated room, that the patients exhibited, during and after the operation, symptoms of severe bronchial irritation, leading in some instances to bronchitis and catarrhal pneumonia, whereby the dangers of the operation were greatly enhanced. He attributed these results to the decomposition products of the chloroform vapor produced by the gaslight. He was, therefore, led to substitute ether for chloroform when operating by artificial light, and with the most gratifying results.—*Cent. für Klin. Med.*

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SATURDAY, MARCH 22, 1890.

THE NATURE OF TETANUS.

For a great many years the epidemic and contagious nature of tetanus has been asserted by various medical and surgical writers, and their observations in the light of recent experiment is interesting. Larry, Thierry and Hutin recorded many outbreaks of this terrible disease after the Napoleonic battles, and Murat in a thesis published in 1816 reports an epidemic of tetanus following the battle of Jena, to which the wounded who had sought shelter in the churches and churchyards (localities in Europe serving as burying-places), it may be recalled, were especially liable. In 1854 Simson, and 1855 Benjamin Travers, of Edinburg, asserted that tetanus was infectious; a statement affirmed by Vulpian in 1866, and reaffirmed by Trelat after his experience in the Franco-Prussian war of 1870–71.

Acting upon the similarity of tetanus and hydrophobia and following the example of Pasteur, Nocart, in 1882 tried in vain to inoculate the disease with cerebro-spinal fluid and emulsions of the medulla obtained from tetanized animals. This was later accomplished by Shakespeare, of Philadelphia. The same year, 1882, Brower and Curtis pointed out the existence of bacteria in the blood in this disease. In 1884 tetanus was first experimentally transmitted to rabbits by inoculation, and at the same time Nicolaier, of Göttingen, found that animals inoculated with soil taken from the roads developed symptoms comparable to those of tetanus in man and determined the constant presence of a bacillus but never succeeded in isolating and cultivating this microörganism. He attributed the symptoms to a ptomaine generated by the organism he had described and which now is known as the bacillus of Nicolaier. His finding was confirmed later by Hochsinger, Ohlmueller, Goldschmidt, Beumer, Lampiase, Nocard, Shakespeare and others, and Brieger in 1887 communicated to the Berlin Medical Society the method by which he had isolated a crystalizable toxic ptomaine which he named *tetanine*, and which would invariably cause tetanus in animals inoculated therewith.

The difficulty has been to isolate the bacillus of Nicolaier and experiment with pure cultures. Until this was done the position of this investigator remained only a working hypothesis. Kitasato, of Tokio, Japan, finally accomplished this result. His experiments were reported in April, 1889, before the Congress of German Surgeons at Berlin. He found these bacilli able to withstand a temperature of 80° C. which effectually destroys the adventitious organisms and left a pure culture. They are extremely hardy and refractory to influences quickly destructive of most bacteria, requiring an exposure of five minutes to 100° C. of heat and of ten minutes to a five per cent. solution of phenic acid to absolutely prevent their growth. They also endure very low temperatures, an interesting and important point when the great rôle attributed to cold and wet by the older writers is recalled. He also reported that they could be best cultivated in acid media in an atmosphere of oxygen. By this process Weyl, of Berlin (*Sem. Méd.*, 90), has managed to transmit tetanus even to dogs, which hitherto have been considered refractory to this disease, and by successive cultures and inoculations with lower animals has scientifically demonstrated the specificity of the bacillus in question.

The elective action of the virus upon the medulla has been pointed out even in very early descriptions of the disease and is shadowed forth in the popular names of the malady. A number of writers have considered the mòrbid process to be an inflammatory condition in that portion of the cerebro-spinal apparatus and very rarely have recorded anatomical changes in this region found post-mortem. It is interesting to know that inoculations with preparations of the medulla are more certain than with other portions of the central nervous system, and it may be permitted to expect that a manner of attenuating the virus and even of securing protection against the disease is within the accomplishments of the immediate future.

Added to the experimental foundation for a belief in the microbic origin of tetanus are the clinical features of the disease, which have been much amplified by VERNEUIL, whose name has long been associated with special studies of this malady. He has recently presented before the Academie de Médecine of Paris a carefully prepared brochure on its origin, giving very numerous verified instances of its epidemic and infectious influence, and its mediate and immediate contagiousness. Of all lower animals the horse is most subject to tetanus, to which fact he gives much importance, and directly or indirectly traces infection to an equine source, very frequently through contamination with an infected soil, a point borne out by the experiments of Nicolaier, already mentioned. The earth may be contaminated in various ways, by the excreta of tetanized animals or by their bodies, and this, in his view, accounts for the preponderance, in traumatic tetanus, of wounds of the lower extremities and of wounds made by objects that have been in contact with the earth. From extensive statistics he notes the interesting fact that cavalrymen are twice as subject to tetanus as artillerymen, and four times as compared with infantry, and alludes to the corresponding geographical distribution of the equine and human form. From a mass of data he feels justified in describing the origin of tetanus as equino-telluric, and after asserting the transmissibility of the disease by instruments and the hands of the surgeon he urges the necessity for public hygienic control of the malady in man and the lower animals.

Altogether the etiology of tetanus may be considered as reasonably well settled, and the necessity for preventing the spread of infection and destroying sources of contagion demands precau-
us which readily suggest themselves. It is to
the oped that treatment of the disease will benefit
has ır added knowledge of its real nature; and
fects , be apropos to mention three cases of
throug. which recovered under hypodermic injec-
of a mo parent fl phenic acid, reported by Professor BAC-
the fæces, ome (*Sem. Méd.*, 90). He employed
out an exte

a centigramme of the acid every two hours, and advises double this quantity, if necessary. In view of the fact that the bacilli of Nicolaier are refractory to a five per cent. solution of phenic acid in culture experiments, this medicament can not act entirely through its germicidal properties, and, indeed, Baccelli attributes its efficiency to the sedative action it exerts upon the medullary centres.

EARLY AND LATE SUCCESS.

A very common error, or rather misguided expectation on the part of the aspirant for medical honors, is immediate acknowledgment. He looks for a swift recognition, perhaps naturally enough, since exuberant youth always paints with glowing colors and ever talks in hyperbole, without regard for the experience of the past. But in the review of events, can it never be brought home, how many cruel disappointments have there not been, and how much fame is based upon episode. What really, in popular esteem, would the reputation of SHERIDAN have been worth without his "Ride," or that of SHERMAN without his "March to the Sea?" Not that we would disparage, but rather that we would exalt the works which rendered such achievements a possible opportunity. In our own profession, in which theory is so often marred by the immaturity of feeble premises, there are examples certainly more than a score. The real discoveries that have survived have had sufficient life to begin revolutions. Bigotry is the popular clamor, while time, which has wrought so many miracles, is the professional. HARVEY and JENNER encountered opposition, not through jealousy, but from the distrust of the crudities which preceded. They deserved honor for their patience in investigation, but received it for their discoveries. The memory of the learning required has perished with them. It represented a toil which sacrificed many comforts and endured even a penury that might have appalled the determination of PALISSY the potter.

DR. BEARD, misled by statistics which suited his purpose, asserted that every man lost his opportunity for distinction after 40, and cited examples of many who became famous while yet in their youth. This may apply to instances where ardor and dash are concerned, as in military life or in vocations where imagination is a potent factor, as in oratory or poetry; but it certainly can never hold good where laws destined to govern a wide range of subjects are to be formulated. In medicine, where the experience of predecessors cannot be rated for naught, where truth has so many side-lights, there must be a deal of facts that require collation, and there must also be much rejection of the irrelevant before arriving at a general law. Hence Koch did not hurry to his conclusions, but prudently waited with the risk of a life untimely ended. Obviously no law can operate before its statement—he therefore wrought long and patiently.

In many departments of science, where the masses are the beneficiaries, the results are to be widely applied. Rules may have their exceptions, but may we not agree with Paget that in the first annunciation they are not sufficiently comprehensive? There must be much study, much deprivation of alluring pleasures, and much concentration of energy before the goal looms up above the horizon. How then can the student, beset with the material problems of life, which consume so much time, at once leap into recognition? On the contrary, the physician must wait for his rewards with due and circumspect modesty, consenting to deserve rather than to possess. To be sure, there may be shorter cuts, particularly to wealth—there may be the aid of business arts; there may be a shoving of wares possibly by street criers, but there can be no solid gains in reputation or even in self-respect. But few charlatans have died wealthy.

Hard, indeed, is it for the majority to toil without the prospect of immediate reward, but the doom of those who deal in the vague or intangible, cannot expect gratifying results, when sturdy growths are so slowly evolved. He builds well who builds solidly.

Early successes are seldom enduring, and in verification of this statement, history is constantly multiplying its examples. It is he who, though baffled by many failures, who still perseveres and, provided life is long enough, succeds at last. If he builds not the structure he yet adds something to the material which others may use. Sir Benjamin Brodie, and before him John Hunter, won enduring reputations despite careers which began in poverty and obscurity. As some one has aptly said, "Your great men are always surprises." Let us therefore work and wait, for work has its pleasures, and waiting its reward.

AN UNUSUAL COLORADO WINTER.

The past winter in Colorado has been a surprise to the older residents of the State. The rains of November, succeeded by snow in December, and the paucity of clear days, have caused misgivings lest the type of the climate shall be changing from dry to humid, and from bright to dismal. There is no absolute fixity about climate anywhere, Colorado inclusive. During recent years there has been a great uniformity in the winter conditions, so much so that many persons have felt like denying the possibility of anything other than bright and bracing weather. The climatological records, however, show that there have been just such wet winters in former, although not in recent years. The inference is therefore fair that the last winter is not an indication of a change in climatic character—in fact, the like may not be observed again for a decade. An absolute fixity of climate is, cosmically speaking, an impossibility. Colorado must have its variations, but their extent and range are less than in the East. The past winter has been one of greater variability than usual, but the type of this variability has been as true to that locality as at many other more easterly points of observation. The excess, as compared with many former years, of winter rainfall and snow has blinded not a few of the newer colonists in Colorado to the fact that there has been a goodly proportion of hours of sunshine in the latter half of the season. Within that time there has been much fine, bright weather, as a partial vindication of those who are in the habit of speaking of Colorado as "the sunshine land," so that of late the advantages of the climate have been sundry, as one might say, and yet not too dry. To speak of a fact that has been observed, there have been days during the past winter when there would be a light snowfall in the morning, and yet the soil would in the afternoon be sufficiently dry to warrant pedestrians to take their exercise without their overshoes; the warmth of the sun and of the occasional wind, called "the chinook," together with the absorbent nature of the soil, speedily effects the obliteration of the lighter falls of snow. One day in February the thermometer marked 80° F. in the shade, and fully 20° higher in the sunlight.

EDITORIAL NOTES.

HOME.

NATIONAL ASSOCIATION OF RAILWAY SURGEONS.—The third annual meeting will be held in Kansas City, Mo., commencing May 1, 1890, and continue three days. Members who expect to read papers at that meeting must send the title of their papers to Dr. E. R. Lewis, *Times* building, Kansas City, Mo., on or before April 1. This course is taken that the programme may be arranged, printed and sent out to each member by April 15. J. H. Duncan, Chairman Committee of Arrangements.

CHANGES IN THE DATES OF MEETINGS.—The annual meetings of the Illinois State Medical Society and of the Medical Association of the State of Missouri, will be held on the *6th* instead of the 20th of May, in order that their members may attend the annual meeting of the American Medical Association, to be held at Nashville upon the latter date. Michigan is now the only State whose annual meeting will be in conflict with that of the Association, and it is to be hoped that a like change will be made there. It is obvious that appropriate action should be had which shall prevent such conflicts in the future.

THE COOPER HOSPITAL AT CAMDEN, N. J.—The hospital at Camden is reported by the *Medical Register* to be the residuary legatee of the estate of John H. Wright, of which the estimated value is not less than one hundred and twenty-five thousand dollars.

THE LITERATURE OF GYNECOLOGY.—The output of the gynecologists, in a literary way, has been summed up by Dr. A. J. C. Skene, of Brooklyn, for the last eight years, in a grand total of 807 books and 7,505 minor articles and pamphlets, or on an average about two books and eighteen articles per week. The *London Recorder* asks the prolific authors to pause for a little period in order that the general practitioner may catch up, or, as the frequent saying is, that he may "get abreast of the times," in regard to this branch of the work.

THREE COURSES OF MEDICAL LECTURES.—In the attainment of a higher standard of medical education, many of our medical colleges are rendering valuable service. The Faculty of Starling Medical College, of Columbus, O., have determined that three courses of medical lectures shall be required of candidates for graduation, after the session of 1890–91. The Faculty of the Hospital College of Medicine, Louisville, Ky., has adopted a similar rule, requiring all students after the session of 1891 to attend three courses of lectures in separate years as a condition precedent to graduation.

DR. L. S. MCMURTRY, formerly of Danville, Ky., who in the development of THE JOURNAL has rendered much valuable service, has removed to 652 Fourth Avenue, Louisville, Ky.

FOREIGN.

INVENTION OF THE MICROSCOPE.—The third centenary of the invention of the microscope will be celebrated this year at Antwerp, where a historical exhibition of microscopes will be held, and public demonstrations will be given of the structure of the instrument and of its development from its first beginnings to its present form.

THE BRITISH MEDICAL ASSOCIATION LIBRARY.—A recent number of the *British Medical Journal* contains a list of "wants" in regard to the files of the growing library of the Association. In order to complete its sets, Volume iv of the American Surgical Association's Transactions, and Volumes vi, vii, and x of the third series of the College of Physicians of Philadelphia, are needed. With his customary energy, Mr. Ernest Hart, editor of that journal, has pushed forward the foundation of a national medical library and has himself contributed to it very generously, as the lists published from time to time have demonstrated.

A PENAL COLONY AFFLICTED WITH LEPROSY.—Leprosy is reported to have found its way to New Caledonia, the French penal colony, and already there are hundreds of cases among the natives and convicts.

MEDICAL ASSOCIATIONS IN CUBA AND CHILI PROPOSED.—The advantages derived by the medical profession by the formation of large voluntary societies have attracted attention in the countries to the south of us. The *British Medical Journal* states that a Medical Association will be organized in Cuba and also in Chili. Of the one proposed in the latter country, it says, the object of the Association is "to give help to all members of the profession or to their families as often as they are in need of it." It will include all the medical men in the country.

TOPICS OF THE WEEK.

MAL-DIGESTION AS RELATED TO FUNCTIONAL DISORDERS.

Dr. W. H. Thomson (*Med. Record*) says: That as a teacher of Materia Medica he had long been in the habit of dividing medicines into two great classes, namely, the organic and functional, the former being those whose special remedial action could never be secured by one dose, but by the accumulated effects of many doses, as bichloride of mercury in syphilis; the latter being those whose entire specific action could be obtained by one dose, as opium. Organic medicines were given for organic diseases, and produced no symptoms of their own; functional medicines did nothing but produce symptoms. Organic medicines showed no effects except in disease; functional medicines produced the same effect in health as in disease.

Neurotics do not Cure.—Neurotics belonged to the functional medicines, relieving symptoms but not curing the disease. Structural changes in an organ produced corresponding functional derangement, but the converse did not necessarily follow, that functional derangements must always have their corresponding structural change.

Distinction between an Organ and its Function.—This became apparent when the difference between an organ and its function was clearly apprehended. One could stimulate or retard the working of an organ, as of the lungs, without affecting its structure. The human body might, in this respect, be compared to a steam engine or a lamp. The function of a lamp was to give off light. This function would be materially modified according to whether the lamp were fed with pure or contaminated oil, although its structure remained unchanged. Thus one could see the error of those who looked forward to the time when the term "functional," as applied to human ailments, should be banished, and a name be given based on the anatomical changes which it is hoped would in all cases be discovered.

The Practical Aspect of the Question.—If every functional nervous disease was due to a distinct morbid change in nerve-cell or fibre, then we must continue to search in the nerve-cell or fibre for that change, and for its causation, and be guided in the treatment accordingly. If, on the other hand, some of these functional nervous disorders were unattended by alteration in the nervous structure, as a poor light might result from bad oil in a good lamp, then we must look elsewhere for the cause and remedy.

Symptoms Distinguishing Functional from Organic Nervous Diseases.—The symptoms of no structural organic nervous disease were ever truly intermittent. For instance, the hemiplegic might show a greater degree of weakness one day than another, but he was hemiplegic nevertheless. Not so with functional nervous diseases. The most skilled specialist might not be able to tell that a given woman was accustomed to having convulsions, or that a vivacious lady would be prostrated with a headache next day. One was no more likely to find a structural change to account for these facts than to find the structural anatomy of cupidity or benevolence. A truly intermittent disease could have no organic basis in the nervous system. Functional nervous diseases, including epilepsy, were due to afferent impressions. If a tumor within the skull caused epilepsy, it was by an afferent impression, as much as if the afferent impression came from the presence of a tapeworm in the intestine. If the disease manifestations were not intermittent, the presumption was that the case was one of organic disease.

Seeking a Toxic Cause.—Affirming that there were purely functional nervous disorders, without any organic change in the nerves, sufficient even to sometimes prove fatal, what, he asked, were the causes? One direction to which he called attention was that of toxic agents developed within the system—a chemical cause. An example was given in which the chief improvement in the patient's condition resulted from diet. The author went on to quote from different chemists and physiologists proving the development of toxic agents in the intestine, urine, etc., agents which produced effects like those of morphine, quinine, etc. Many of them were capable of causing headache, muscular languor, depression of the heart, great depression of spirits, lowering of the temperature, and convulsions. Usually we were protected from self-poisoning through the function of the liver, and among the most efficient antiseptics were the digestive juices of the alimentary tract. This double function of the digestive juices was too often overlooked in combating disease. Derangement of the stomach and bowels, of a direct or reflex nature, he thought preceded the development of the hysterical status in the majority of cases. He had had better success in the treatment of hysteria by medication directed to the alimentary canal for the prevention of toxæmia, than he had ever before obtained from the use of old-fashioned antispasmodics. The same was true, in the main, of migraine. The same principle applied largely to the treatment of epilepsy, but he reserved the elaboration of this idea for a future occasion. —*The American Lancet.*

IS THE GASTRIC JUICE A GERMICIDE?

Drs. Straus and Wurtz have conducted a series of experiments in order to ascertain the action of the gastric juice on the bacilli of tubercle, charbon, typhoid and cholera morbus. The juice from man, dogs and sheep was selected for the experiments. It was found that digestion for a few hours at a temperature of 100° F. destroyed all the germs. The bacillus anthracis was killed in half an hour, the bacillus of typhoid and cholera in under three hours, whilst the bacillus of tubercle bore digestion for six hours, under which time it was still capable of provoking general tubercular infection. Even when digested for from eight to twelve hours the bacillus was still capable of producing a local tubercular abscess, not followed by general infection. Over twelve hours' digestion destroyed it completely. The germicide influence of gastic juice appears to be due to its acid contents, as it was found that hydrochloric acid alone, dissolved in water in the same proportion as it is in gastric juice, proved as active a destroyer of the bacilli. The pepsin appears to have no influence on the germs. MM. Straus and Wurtz, who publish their researches in *Archives de Médicine Expérimentales*, wisely remind their readers that the germs, when protected by animal and vegetable tissues and introduced into the stomach in ordinary nutrition, are not exposed to so direct and prolonged action of the acid constituents of the gastric juice as in these experiments.

A SERIES OF LECTURES.

The Société de Médecine Pratique, which is one of the oldest medical societies in Paris, has started a series of public lectures on different hygienic subjects, to which the laity, as well as members of the profession, are admitted. The lectures will be delivered weekly by different lecturers, and will be continued to the end of April next. Dr. Dujardin-Beaumetz opened the series by a most interesting lecture on vegetable diet, which was well appreciated by a large audience. He began by showing that it was possible to live exclusively on vegetables, even in a rigorous climate (as exemplified by the inhabitants of Auvergne and of Brittany, where the poorer classes live on scarcely anything else), if milk, cheese and eggs were added. The vegetable diet might be beneficial in defective action of the kidneys or of the digestive canal, in dilatation or other disorders of the stomach, in putrid diarrhœa, or in all maladies characterized by hyperacidity. But while the vegetable diet rendered great service in therapeutics, man was omnivorous, and it was evident that he should suit his diet to climate and necessity.—*The Lancet.*

THE NINETEENTH CONGRESS OF SURGEONS.

The nineteenth Congress of Surgeons is to sit in Berlin in Easter week. It will be opened at noon on April 9th, in the great hall of the university, in which the afternoon sittings will also be held. The morning sittings, which will be devoted to the demonstration of preparations and the exhibition of patients, will be held from 10 till 1 in the University Hospital. Announcements of lectures, etc., should be addressed to Geheimrath Professor Gurlt, who is permanent secretary. On the first day Kappeler, of Münster, will speak on "Ether and Chloroform Narcosis," and Brauns, of Tübingen, on the "Treatment of Tuberculous Joint and Gravitation Abscesses by Injections of Iodoform." The committee will report on the present state of the Langenbeck House project, and the successful acquisition of a site for it.

SPECIAL RATES TO BERLIN.

Those who purpose to attend the International Congress in Berlin may find it for their interest to confer with Dr. Robert Newman, No. 68 W. Thirty-sixth St., New York City, who, with the concurrence of the special committee of the American Medical Association, has been able to secure favorable rates for transportation.

MENTAL ABERRATION IN PARIS.

Dr. Paul Garnier, in a report addressed to the Society of Medical Jurisprudence, has brought to notice the alarming increase of cases of mental aberration that occur in Paris. In the last fifteen years this increase has been more than 30 per cent. The principal causes of the increase of insanity are, according to the author, alcoholism and excessive intellectual work. Mental aberration is a little more common in men than in women. The proportion is fifty-six men and forty-four women out of one hundred lunatics, but this proportion tends to be equalized, as the progression of insanity is more rapid for the female sex than for the male.—Paris Corr. *Boston Medical and Surgical Journal.*

THE BERLIN INTERNATIONAL CONGRESS.

The General Secretary of the Berlin International Congress states that reductions in fares have been arranged for Americans who attend the Congress, through the agency of Brasch and Rothenstein, of Berlin, and of the Hamburg American Packet Steamship Company. The reductions will even be found to apply to travel on this side of the Atlantic. The assistance of the firm named will be given gratuitously to any member of the Congress who may apply to them for particulars as to expenses, routes of travel, and European excursions supplementary to the convention.

IMMUNITY.

During the work of the late Chloroform Commission in India, it is said that while the attendants were attempting to administer spirits of wine to a strong pariah dog, he became excited and struggled violently. None of the assistants could manage him. Dr. Lauder Brunton then approached the dog, who flew at him and bit him severely on the wrist, yet he seized him, held him down, and administered the dose. When he released the dog, the wrist was bleeding from two wounds. Everyone was alarmed, not only at the accident but at its terrible possibilities. "It does not matter," he quietly remarked as he held out his hand to be dressed, "I was accidentally inoculated some twelve years since, hence there is little or no danger."

DEATH OF DR. WM. S. MILNOR.

Dr. Wm. S. Milnor, late Resident Physician at the Philadelphia Hospital, died after a lingering illness superinduced by la grippe. It began with an inflammatory rheumatic affection of the knee-joint, and ended in a pyo-pericarditis. He was attended by Drs. Musser, Pepper and Guiteras. As soon as the latter trouble was recognized the pericardium was aspirated and eight ounces of purulent fluid withdrawn. Upon consultation it was deemed advisable to cut down upon the serous membrane of the heart and insert in its cavity a drainage tube. Dr. John B. Weaver, of this city, did the operation. Dr. Milnor survived for three weeks, dying finally from general exhaustion and degeneration of the heart muscle.

LA GRIPPE is greatly on the decrease in Philadelphia. Most of the large manufactories, etc., are now able to resume work with a full force of help, which a few weeks ago was impossible owing to the then prevailing epidemic.

PRACTICAL NOTES.

RECOVERY AFTER A WEEK'S TOTAL ANURIA.

At a meeting of the Medical Society of the Paris Hospitals on the 14th ult., M. Féréol related a case of a man who, having inherited gout, had on two occasions within the past two months had attacks of suppression of the urine lasting twenty-four hours, preceded by lumbar pains and hæmaturia, and followed by the emission of clear non-albuminous urine and a small calculus. A third attack had lasted for eight days, and during that week he had only passed a few drops of urine. Then the anuria ceased abruptly, and within twenty-four hours he had passed ten litres of watery urine containing 1.4 per cent. of urea, or 170 grammes in twenty-four hours. At the same time he passed a uric acid calculus the size of a pea and several smaller ones. During the week of anuria he had only slight pain in the right side, and the bladder was empty. But there had been evidence of uræmia, as during the last two days there was slowing of pulse to 52, lowering of temperature (37°) in the rectum, mydriasis, and a "subjective sensation of an ammoniacal odor in the urine." The treatment consisted in dry cupping to the loins, electrical applications night and morning, inhalations of fifteen litres of oxygen daily, one litre and a half of milk, half a litre of Vichy water, and half a litre of an alkaline water and Beaujon's diuretic potion; on the sixth day a bath lasting fifteen minutes, on the seventh day a purgative, and on the morning of the eighth day thirty centigrammes of caffein. M. Féréol did not think that the suppression was due to there being only one functionally active kidney, but rather that the passage and impaction of the calculus had caused a reflex inhibition of the secretion from the uninvolved organ. The quantity of urine afterwards evacuated was opposed to the first-named hypothesis. Urea must have accumulated in the blood, for the skin was dry and the bowels confined, except for a watery evacuation following the purgative. Sixteen days later the patient was in fair health save for slight lumbar pain and the daily passage of uric-acid gravel. M. Royet mentioned a case, also a gouty subject, eighty years old, in whom a large number of calculi lodged in the ureter without uræmia or anuria; when the calculi were passed he had successive attacks of anuria, none of which exceeded thirty-six hours. M. Hayem thought the case was opposed to the generally accepted view that an adult secretes in three days enough urinary poison to kill him. Roberts has said that myosis is characteristic of uræmia from suppression, not mydriasis, as in M. Féréol's case. If the amount of potash had been estimated in the urine following the anuria, it would have been possible to test the opinion of Voit, Feltz, and Ritter, who say that the toxic quality of urine is proportionate to the richness in potash salts.

MENSTRUATION AND LACTATION.

The influence of menstruation upon lactation has long been empirically observed. Schlichter brought before the Medical Society of Vienna the results of his scientific study of this subject. At first an average of the constituent of milk in three wet nurses was obtained by careful observation and measurements. Then fifty-two wet nurses were observed during and after menstruation. During a total of two hundred and thirty-three days of menstruation it was discovered that the fluctuations in the quality of the casein, fat, sugar, and other constituents—were less than the normal daily fluctuations. As the clinical observation of the infants did not bring out any decided change, and as some of these even gained weight on milk furnished by menstruating nurses, the author felt justified in opposing the generally accepted view that menstruation occurring after the lapse of six weeks exercises an injurious effect upon the infant, and that the occasionally observed disturbances of digestion in such infants are attributable to ordinary causes. If menstruation occurs prior to the sixth week, or if it is profuse, the nursling suffer distinctly. —*Times and Register.*

TO PRACTISE DEEP BREATHING.

1. Stand erect, the feet separated, the right slightly in advance. 2. Shoulders and head in natural position. 3. Hands lying lightly on the abdomen, the fingers pointing to the umbilicus. Compliance with this rule enables the child to be sure she is using the abdominal as well as the pectoral muscles in respiration. 4. Empty the lungs of air, then close the mouth. 5. Inhale slowly through the nostrils, using abdominal as well as chest muscles. The lungs thus receive the utmost possible amount of pure oxygen and muscles have exercise. 6. Hold the breath as long as possible, and meanwhile use the ordinary calisthenic exercises. 7. Never exercise except with the chest well expanded with air. 8. Exhale slowly, enunciating the vowel sounds as the air passes the lips.

A test for the purity of drinking-water is given as follows by Prof. Angell of the Michigan University: "Dissolve about half a tea-spoonful of the purest white sugar in a pint bottle completely full of water to be tested, tightly stopped; expose it to daylight and a temperature up to 70 degrees Fahr. After a day or two examine, holding the bottle against something black, for floating specks, which will betray the presence of organic matter in considerable proportion."

SOCIETY PROCEEDINGS.

New York Academy of Medicine.

Section on Theory and Practice of Medicine.

R. C. M. PAGE, M.D., CHAIRMAN.

DR. WALTER MENDELSON read a paper on

THE PHYSIOLOGICAL TREATMENT OF OBESITY.

Experience had shown, he said, that under ordinary circumstances and in the temperate zone health is best preserved when the diet consists of a combination of all three of the classes of foods, nitrogenous, carbo-hydrates and hydro-carbons, and that the average proportion of the albuminous to the non-albuminous foods is about 1 to 3½ or 4. The most recent authorities, such as Pettenhofer and Voit, had demonstrated that the albumen of the food is the principal source of the fat found in the body, their investigations having shown that this albumen undergoes, after it has reached the cells of the tissues, certain chemical changes, by which part of it is converted into fat and part goes to the direct nutriment of the tissue cells. It was undoubtedly true that a certain amount of the fat taken as food is stored up; but the increase of body fat occurring after eating much fat—though in part a direct result—was chiefly brought about indirectly, the food fat shielding from oxidation that which had been formed from the albumen ingested. It was in the same indirect manner that the carbo-hydrates acted. Ordinarily the starches and sugars were not themselves converted into fat; only when taken as food along with albumen did this seem to occur. But when taken as food along with albumen, they, being more easily oxidizable than the tissue fat, by preventing the latter from being consumed, gave rise to an accumulation. There were, then, three sources from which fat might be derived for the body: (1) From that resulting from the splitting up of the albumen of the food; (2) from the transfer of that fat ingested as food, and (3) probably from fat formed from starches and sugars when these are taken in large quantities.

In the treatment of obesity, he said, we must consider the individuality of the patient and use great care to suitably regulate the diet and exercise, having in mind that the change we wish to bring about, to be beneficial, must be gradual; that the cells must be educated by degrees to the new duties we wish them to perform, and that anything approaching starvation—like the Banting cure—is to be condemned. With regard to diet, he went on to say, it must be our general plan to give much albumen and relatively little non-nitrogenous food, doing this in order, firstly, that the cells, from the abundance of nourishment brought to them, shall be capable of great chemical activity; and, secondly, that the tissue fat thus necessarily formed shall not be preserved from oxidation by the presence of the more readily oxidizable food fat and starches. We should always keep in mind, however, that as the fat of the body becomes by this process gradually reduced, the diet must undergo a corresponding change, more and more of the non-nitrogenous foods being allowed as the body grows relatively richer in albumen and poorer in fat; for unless this be done, a point will be reached where not only the fat of the body, but the albumen as well, will be consumed, and the patient, after feeding thus on his own muscular and glandular tissues, will begin to complain of weakness and lassitude. It is important to remember that the patient should always feel better, never worse, under treatment, and that the desired change cannot be brought about quickly. All reforms, to be lasting and beneficial, must be slow in action and the result of education; they must be a growth from within, and not an impress from without.

DR. L. F. BRYSON read a paper on

THE PRESENT EPIDEMIC OF INFLUENZA.

In the discussion on it Dr. C. L. DANA said that the journals had told us that the epidemic began in St. Petersburg about the middle of November, and he believed it was about the middle of December that the disease made its appearance in New York. In his experience the whole course of this affection showed conclusively that it must be due to an infectious germ. If we could draw any conclusions from analogy, influenza, like other specific diseases, was caused by a specific microbe of some form or other; but if this was the case, it was manifestly impossible for such a contagium to travel from St. Petersburg to New York in the short space of one month. In order to accomplish this feat it would have to be a much more rapid traveler than any known form of contagion. We were, therefore, forced to a second conclusion, viz: that the germ has been in this country. The microbe of influenza was not a thing borne by the wind or carried by individuals, as the cholera germ was, but it was distributed throughout the world.

There seemed to be further concerned in the production of the disease some epidemic influence, whether telluric, electric, or what not, although the speculations on this point had not as yet proved very fruitful. He understood that in Vienna it had been claimed that the specific microbe of la grippe had been found, though it had not as yet been found to be capable of reproducing the disease. He did not believe, however, that this important discovery had yet been made.

He then proceeded to speak of his own experience as regards the nervous manifestations of the present epidemic. A Russian authority, he said, had divided the cases into three classes, nervous, catarrhal and gastric. As far as he had been able to learn, the catarrhal and gastric varieties had been met with here, but the purely nervous form did not seem to have appeared, or at least to any noticeable extent. He had met with one case in which there was no chill (though some chilly feelings) or fever, and no catarrhal trouble, but in which almost the only symptom was excessive weakness. He had seen one patient in whom mania appeared after grippe, and another in whom encephalitis developed. In the newspapers, also, several cases had been reported in which mania accompanied the disease. In one case which he saw facial paralysis occurred, and in a child there were symptoms of poliomyelitis. He believed that in this instance, however, there was nothing more than a congestion of the spinal cord, caused by the epidemic influence. He had met with a good many cases of facial neuralgia, but they all seemed to be associated with the affection of the nasal passages. The most characteristic phenomenon of the epidemic was the prostration so commonly met with, and this he believed to be the effect of the specific poison of the disease upon the heart, as was the case in other zymotic affections.

Dr. W. P. **Northrup** spoke of the ages of the patients attacked. In the New York Foundling Asylum, where there were between 700 and 800 inmates, not a single diagnosis of influenza had been made among the children under 2 years of age. Some of them, which were net-nursed by women suffering from the disease, fell away a little, and occasionally there was a moderate attack of diarrhœa among them; but this was all. Among the "run-abouts," however, children from 3 to 5 years of age, something like 15 or 20 per cent. suffered. The attack was usually characterized by moderate febrile movement and more or less bronchitis, but all the children rapidly and completely recovered. Almost the entire number of those affected came down with the disease within the space of two or three days. After that there were but two or three sporadic cases. It was noticeable that there were more than the usual number of pneumonias in the house at this season of the year; but, on the other hand, the disease was less fatal than usual.

Among the adults in the establishment who were affected with influenza all the severe cases occurred in those between the ages of 18 and 25. Of the entire number of inmates who were from 2 to 25 years of age about 80 per cent. had the disease, though many of the cases were very mild. In one case there was a well marked erythematous eruption. In this instance the temperature rose to 103°, there was green vomiting and ærgina, and the whole attack closely resembled scarlet fever. Among the young women there were several severe cases of pneumonia and one case of Bright's disease. One curious feature about the epidemic in the Foundling Asylum was that all the wards were visited by it except one. In this ward there were sixteen "run-abouts," six nurses and numerous infants, but not a single case occurred there, although there were many cases in the wards just above and below it. It was also worthy of note that in the fraternity none of the pregnant women were attacked.

Out of fifty-two old ladies at a Home where Dr. Northrup attends only two suffered from the influenza. These two cases were of moderate severity, but typical in character. Among the attendants at this institution six out of fourteen had the disease and were quite ill with it. In private practice he had seen one case with the eruption. It was a papular erythema, symmetrical on the two sides of the body, and attended with much itching and burning.

As to the treatment, he desired to say that he had not used one grain of antipyrin among his patients. The reason for this was the unfortunate experience which he had once had with this remedy. In this instance he prescribed 15 grs. of the drug, and it produced extreme depression, so that the patient became pulseless, and he was much alarmed. Notwithstanding this untoward effect, the patient was willing to take 5 grs. of antipyrin afterward, and in this quantity it gave rise to a troublesome and painful urticaria and to such distressing dyspnœa as he had never seen except in occasional cases of Bright's disease.

Dr. T. R. **Pooley** said that he had himself been affected with the disease, and when the attack came on he took great interest in studying the eye symptoms, which he learned afterwards were such as were frequently met with in the epidemic. There was a deep-seated sense of pain in the orbit, and the movements of the eye were accompanied with much pain. There was also very marked asthenopia. The symptoms referred to were only transient, and it had not yet been shown that any permanent disease of the eye ensued. He supposed the trouble to be simply a weakening of the ocular muscles, such as was met in other diseases producing exhaustion. He had met with only one or two cases in which the conjunctiva was affected, and in these he thought it very possible that the patients had had catarrhal conjunctivitis before they were taken with the influenza.

He had of late seen an unusual number of cases of acute inflammation of the middle ear, and they all seemed to be attributable to the effect of the epidemic and to be connected with catarrhal inflammation of the throat and air passages. In most cases examination showed hyperæmia of the drum head, and in some instances there was perforation of the latter.

Dr. O. D. **Pomeroy** said that he had met with a larger number of cases of ear trouble than of eye trouble as a result of the influenza. Both these classes of affections seemed to occur some little time after the disease had spent its force. At the Manhattan Eye and Ear Hospital he had seen six or seven cases of catarrhal conjunctivitis, and one case of very severe ulceration of the cornea. In one case not in his own clinic there was complete ecchymosis of both eyes, such as was sometimes observed in whooping-cough, where it was no doubt due to rupture of the blood-vessels from the violence of the cough. In the case in question also the patient suffered very greatly from cough. All the principal symptoms noted by Dr. Pooley had likewise been observed by himself.

As regards the ear, purulent otitis of an acute character was quite common. In this the discharge was very great, and spontaneous rupture of the drum head not infrequently occurred. The purulent cases were about twice as numerous as the catarrhal ones. The former were apt to be very violent in character, and in one instance he had met with there was mastoid peritonitis. The ear symptoms seemed on the whole to be more frequent and of a graver character than was the case in scarlet fever; and they are all probably caused by the spreading of an inflammatory process from the throat through the Eustachian tube, and thus affecting the middle ear.

In answer to a question by the chairman, DR. FRANCIS DELAFIELD said that he supposed every one had been struck with the frequency with which both bronchitis and pneumonia had occurred in the epidemic. As regards the bronchitis there were two things which had repeatedly attracted his attention. The first was the very satisfactory way in which the apparently very bad cases got well. Often there was great difficulty of breathing, with considerable rise of temperature, and expectoration of blood as well as mucus. Yet he had been surprised to see how well such patients had done, and in what a comparatively short time improvement began to take place. The second point was the number of individuals who, while they had a general bronchitis as far as the large tubes were concerned and localized bronchitis involving the smaller tubes, remained free from any implication of the lung tunic. This class also, in his experience, had done well.

As to pneumonia, he thought that every one must have been impressed with the fact that almost all those who were attacked by it had a great deal of bronchitis with the pneumonia. In these cases of pneumonia there was a considerable difference, and he had observed altogether four classes.

In the first the cases were very mild. The temperature did not run high, and there was very little dulness on percussion. There were some subcrepitant râles over a portion of the lung; but these cleared up within a few days.

In the second class of cases the patients did not seem to be very ill, and did not have a very high temperature, but they had considerable bronchitis and perfectly well marked consolidation of one lobe for one or two weeks; after which they got well.

The third class was composed of those which had fully developed pulmonary consolidation which went on for quite a long time. The temperature rose perhaps to 104, and did not go down. After ten, or even twenty days, it would still be found that the consolidation had not cleared up. In many instances, however, even after this very long period, the lung did clear up, and the patient got well.

The fourth class was made up of the very bad cases. In most of them, together with the pneumonia, there were evidences of a great deal of bronchitis. The action of the heart was poor, and there were collections of blood in the veins. When this condition had been established the heart's action was rapid and feeble, and expectoration became suppressed. Such patients seemed to do badly, no matter what course of treatment was pursued. Some seemed to be relieved for a day or two, and then the grave symptoms all came back again. In a smaller number death occurred as in ordinary lobar pneumonia.

DR. LOCKWOOD spoke of the great usefulness of antipyrin in relieving the neuralgic pains so constantly met with in grippe, and stated that for the cough he had found muriate of ammonia, in combination with other remedies, of the greatest service.

DR. WOOD said that he thought a note of warning ought to be given in regard to the use of antipyrin. This, he was convinced, was an agent which was quite capable of complicating the disease very seriously a little later on in its progress, if it did not at the outset. Its administration was apt to be followed by cold perspiration and a relaxed condition, and if much bronchitis were present it was liable to produce great depression unless employed with extreme caution.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR REGULAR CORRESPONDENT.)

Dr. Gautier on the Properties of Cod Liver Oil—Dr. Leudet on Phthisis—The Non-Operative Treatment of Anal Fistula—Cure of Intestinal Occlusion by Enemata of Sulphuric Ether.

At a recent meeting of the Academy of Medicine Dr. Gautier read a note on the properties of cod liver oil, and the following are the principal conclusions: 1. It is certain that it is not only to the alkaloids and to the morrhuic acids that the cod liver oil contains that is due its undeniable reparative activity. 2. It acts by its fatty substances, which are very easily assimilable, thanks to their slight acidity, to their partial saponification, and to the dissolution in the oil, to a certain quantity, of biliary matters, which render it extremely easy to form an emulsion, particularly when in contact with the ferments of the pancreas. These fatty substances, so easy of digestion, ready to be assimilated, are protective agents, forming reserves to be accumulated in certain tissues and to be utilized by the economy, which, to meet its incessant wants of calorification, borrows the heat which is necessary for the destruction of the materials of the cells. 3. These oils act as energetic repairers by their richness in phosphates, in phospho-glyceric acid, in lecithine and in phosphorus, combined or in an organic state. It is in this latter form that the economy assimilates more easily this indispensable aliment, which presides over the perpetual renovation of the tissues. It is known that in phthisical, scrofulous and rachitic subjects, as well as in cachexia, the disassimilation of the salts of lime, and principally the calcic phosphates employed by these patients, cod liver oil furnishes them an incessant provision of phosphorus under the form in which it exists in milk, the yolk of egg, the brain legumine, caseine; that is to say, in the same state in which it can be directly utilized and assimilated by the organism. 4. In fine, these oils of the cod's liver, by their alkaloids, the most important of which is morrhuine, and by morrhuic acid, excite the nervous system, accelerate denutrition, increase considerably the quantity of urine and of the perspiration excreted, and increase the appetite, as has been experimentally demonstrated. 5. It is true that among the alkaloids of cod liver oil there are some—amylamine, for example—which are dangerous poisons. The causes of the efficacy of cod liver oil may, therefore, be summed up thus: Sensible augmentation of the appetite and of the renal, endoral and intestinal secretions under the influence of its principal alkaloids; rapid assimilation of phosphoric principles presented to the economy under the form of lecithine and other organic phosphatic matters directly utilizable by the young cells; powerful reparation of the reserves of calorification, thanks to the easy absorption of fatty substances.

In a note read by Dr. Leudet at the Medical Society of Hospitals on phthisis, regarded as a hereditary and contagious disease, the author brought to notice the remarkable fact that phthisical subjects supported the influenza better than others. At this time of the year, however, they furnish an important contingent in the general mortality. According to Dr. Lagneau, 21 per cent. of the total number of deaths in Paris during the year 1888 may be attributed to tuberculosis. The same report shows the number of young men of the departments of Var and of the Bouches du Rhone who are exempted from military service on account of diseases of the chest or of weakness of the constitution. This number is double that of the other departments, and consequently it becomes urgent to examine whether the consumptive subjects who pass their winter on the shores of the Mediterranean are not infecting the inhabitants. Dr. Leudet believes, on the contrary, that the cases of contagion of tuberculosis are extremely rare. Dr. Vallin is of opinion that with the facts published to the present time it is difficult to say how much the development of tuberculosis is due to heredity, and how much to contagion.

Professor Guyon lately read a paper before the Société de Chirurgie on the non-operative treatment of anal fistula. The author advises that fistulæ which do not give rise to distressing symptoms ought not to be operated upon. The non-operative treatment consists in rendering the stools soft and regular, and in insisting upon scrupulous cleanliness. The constitutional treatment consists in the administration of iron associated with the bromides, and he recommends the following formula: Potassii bromid, 10 grams; fer. ammon. cit., 50 centigrams; syrup aurant, 100 grams. One tablespoonful to be taken twice a day. After each motion one of the following suppositories should be introduced into the rectum: Iodoform, 10 centigrams; ext. belladon., 2 centigrams; ol. theobrom., 180 centigrams.

Before the Therapeutic Society Dr. Clausi gave an account of two cases of intestinal occlusion cured by enemata of sulphuric ether, after having unsuccessfully tried all the other means habitually employed in these cases. The following was the author's mode of procedure: After having dissolved 10 grams of ether in alcohol and having added to it 300 grams of distilled fennel water, he introduced into the rectum, as high up as possible, an elastic tube, and then, with an ordinary syringe, he injected the liquid into the intestine. The patients experienced a painful sensation of heat diffused all over the abdomen, and almost immediately after they had returns from the stomach having the characteristic odor of ether. In a short time this was followed by abundant evacuations of fæcal matter, with the disappearance of the colicky pains and all the other morbid manifestations. The criterion which guided the author to employ sulphuric ether was founded on its physical and physiological properties, which rendered it as a means very efficacious to excite the peristaltic movements of the intestine, an essential condition to overcome an occlusion; and this, either because it directly excites the terminations of the motor nerves of the intestine, or because, having its point of ebullition at 35° C., the internal temperature of the body, the ether should pass rapidly to a state of vapor with a great force of tension; and in producing the sudden and rapid distension of the intestine it is obliged to act by contraction, and can thus overcome the obstacle which opposes the free passage of the fæcal matter.

DOMESTIC CORRESPONDENCE.

Audi Alteram Partem.

The Climatic Causation of Consumption.

To the Editor:—I have been anxious to read Dr. Baker's paper upon "Climatic Causation of Consumption" ever since I first heard about it. At Newport, during the last meeting of the Association, a friend saluted me with "Doctor, your avocation is *busted*. Go home and take down your shingle, Baker, of Michigan, has just read a paper proving that consumption is caused by *cold*, *dry air*." Now, it is not because of any fear of this jocose prediction being realized that I am writing to you, but for the reason that I was kept from hearing Dr. Baker's views by having to read a paper myself in another Section. I suppose my medical friend has voiced the expectation of others who know me that I would answer such an argument, coming from one who has both time and statistical data at his command for purposes of classification, as no one else has in America, because I have repeatedly taken the opposite ground in medical papers I have written.[1] This much by way of explanation. I would have presented the following objections to part of the paper mentioned had I been present at its reading. To a resident of Colorado it seems absurd that the English language can be so twisted as to seem to fairly indicate the conclusion that *cold dry air* is the cause of what we know in thousands of cases it has cured, namely, consumption; yet here it is in the last issue of your JOURNAL, January 18th, "The Climatic Causation of Consumption," by Henry B. Baker, M.D. The new theory is sandwiched in between the Bowditch and Buchanan soil moisture cause, and the Koch tuberculer bacilli idea, and made to harmonize with Dr. B.'s conclusions by means of an extensive array of statistics, which I simply believe are misapplied.

Lack of time compels me to forego the elaboration of the objections which occurred to me as I yesterday for the first time read this paper. I do not refer to the other two causative influences mentioned, which are generally accepted as proven, but to Dr. Baker's peculiar ideas, including the suction of chlorides towards the lungs in pneumonia *by cold dry air*, I can only summarize my points.

Firstly, and here lies the fault of his second conclusion that cold dry air can cause consumption. Is it not an assumption, as a premise of what follows, to throw out *relative humidity*, as Dr. Baker does, and to consider *absolute humidity* alone? I have thought myself a defender of *absolute humidity*, and in the rating of it with relative humidity and cloudiness of the air, to illustrate the shades of moisture and dryness on my climatic charts.[2] I considered that I had been amply generous in giving it a little more than a third of the combined rating influence. This total annihilation of relative humidity, however, which we have now to deal with, is an arbitrary proceeding which invalidates every after conclusion depending upon such a premise. For if the air is dry because it is cold, even though it is produced by the damp emanations from a saturated soil, as Dr. Baker puts it, "Realizing the fact that over the *low wet soil* there is generally a *cold dry atmosphere*," then why cannot the term "dry" by given to a London fog, the air of the Mammoth Cave (58° F.), or any other kind of atmosphere this side of a Russian bath? One can prove anything if relative humidity is left out. According to our author, any air that is of low actual weight of moisture to the cubic foot is "dry." Are not things what they seem? Has not the sensational effect of cold increased, as we all know it is, by high relative humidity, any place whatever in this consideration?

Secondly, Is it not an assumption to conclude that because the death-rate from consumption and exudative lung diseases is increased after or with cold weather, that the cold was the direct cause of this? Personally I feel like combatting the universal idea that we *catch cold*, and to claim that we always *catch hot* first. It is an everyday experience with everybody that the relaxation due to fatigue, over-exertion, low-resisting state or heat which renders the subsequent exposure to *cold* dangerous. It is sufficient simply to ask this question—was it not an indirect effect only of cold that drove people *indoors* where in confinement they suffered the carbonic acid poisoning, defective elimination and tubercular infection which largely contributed to the increased mortality mentioned, and which never could have happened in the *cold out door air*? In this regard the doctor's classification of small-pox with consumption is most unfortunate for his theory of the causation of the latter disease; for do we not all know, from whatever of experience we may have, that the contagiousness of small-pox is favored above all other means by the close and heated apartments of the poor? In illustration, an epidemic of small-pox a year ago made its way to different habitations in Denver from a certain gambling room, where some infected tramps from a neighboring city tarried. Does anybody pretend to say that moist cold or dry cold air had any other than an indirect causative effect in spreading that small-pox?

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[1] "Rocky Mountain Health Resorts," Houghton, Mifflin & Co., Boston; "Moisture and Dryness," Report to American Climatological Assn., 1884, Rand, McNally & Co.; "The Preferable Climate for Consumption," from Transactions of the Ninth International Congress; reprinted by the Colorado Legislature (copies furnished an application to Secy. State Board of Emigration, Denver, Col.)

[2] "The Annual and Seasonal Climatic Charts of the United States," Rand, McNally & Co., Chicago, Publishers.

Thirdly, Is it not obviously unreasonable to exclude from this consideration the remarkable effect cold has upon the extended cutaneous surface of the body? May not the revulsive influence of cold *on* the body account for as much or more than the effect of cold *in* the lungs? Yet there is nothing in this extensive analysis of the influence of cold except reference to effects *within* the lungs. The only way I can account for this important omission is the author's statement, "It seems to be difficult for the human mind to grasp more than one idea at a time."

Fourthly, Is not the effect of Dr. Baker's so-called *dry cold* air upon pulmonary tissues overstrained when a suction power is attributed to it sufficient to draw the chlorides into the exuded deposits characteristic of croupous pneumonia and thus account for the absence of these chlorides in the urine? 1. Because such supposed power of cold dry air is not constant or ever present in acute pulmonary affections. 2. Because the behavior of the chlorides in pneumonia does not have to be explained in this peculiar way. 3. Because croupous pneumonia is most likely an infectious disease depending upon a malarious element in the air or in the patient's blood, for its peculiar manifestations, perhaps even for the behavior of the chlorides. 4. Because the statistics of deaths from croupous pneumonia, could they be obtained, would overwhelmingly show that really dry sections (relatively as well as absolutely dry, such as found at high altitudes), would give less than one tenth the mortality of warm moist localities. (See statistics of United States census for proof of this, notwithstanding the undoubted fact that in those statistics catarrhal and intustitial pneumonias, bronch. pneumonia, bronchitis and pleurisy complicate the pneumonia records.) If croupous pneumonia is infectious, its causation of course cannot then be explained by this mis-called *cold dry air*. 5. Because the inhaled atmosphere could not reach the ærating portions of the lungs as *cold dry air* to have the peculiar effects attributed to it. In ordinary breathing the ratio of inhaled air to that already contained in the lungs is not much if any more than 10 per cent. and the process of heating and mixing these currents of air is both constant and rapid. The remarkable transpiration of moisture from the lungs in really cold dry air[3] is not only a constant effect in bronchitis, catarrhal and intustitial pneumonia as well as in health and in croupous pneumonia, but in chronic infiltrations and slight tubercular lung lesions it is believed to be curative by every physician of any ability in this part of the country from Wyoming south to New Mexico. No doubt that where tubercularization is so localized or concealed that the curative cold dry air cannot reach the seat of the disease and thus can offer no check to its progress, that activity may be rather increased than diminished through the stimulation of both heart and lungs due to cold and elevation above the sea; and in these cases, as in phthisis in Florida and acute miliary tubuculous, should of course not be sent to high altitudes. The everyday experience of these physicians is so decidedly to the contrary that no further excuse is needed for refuting a statement like the following, quoted from Dr. Baker's article: "The specific cause of consumption apparently and probably finds lodgment in the lungs and air passages, other things being equal, in proportion to the coldness and *dryness* of the atmosphere; and not only this, but the danger of auto-infection and of death to one in whose body the disease is already present is increased by exposure in an atmosphere unusually *cold and dry*, while the condition of the blood is such that saline and albuminous exudates are liable to occur in the air passages."

While I have both respect and friendship for the author, I feel compelled to say the above statement is groundless, being based upon a false premise and consequently the resulting generalizations (3, 5 and 8) are not sound, that the conclusions are contrary to experience and for reasons herein stated do not appear to be established, as claimed, by the valuable statistical tables presented. CHARLES DENISON.

Denver, Col., Jan. 22, 1890.

NECROLOGY.

Edwin Arius Kilbourne, M.D.

Dr. Edwin Arius Kilbourne, Superintendent of the Illinois Northern Hospital for the Insane at Elgin, died February 27, 1890, at that place, in the fifty-third year of life. Born in Vermont, he was practicing dentistry and studying medicine at the opening of the war in 1861, and enlisted as a private, soon rising to the rank of Captain, and served a long term as Judge Advocate in the Courts Martial. After the war he resumed his medical studies, graduating from Ann Arbor and also from the College of Physicians and Surgeons of New York. For a long time he was assistant physician at the New York City Insane Asylum on Blackwell's Island, and made a short trip abroad, finally locating for the general practice of medicine in Aurora, Ill., and was shortly thereafter, in 1872, appointed Medical Superintendent of the Northern Hospital, a small portion of which was just completed and ready for patients. In this capacity he has been connected with that institution up to the time of his death, watching, directing and fostering its growth with a devotion and absorbing interest which did much to make him prematurely old and open for him an early grave. Under his stewardship the hospital has attained an enviable reputation as a well conducted and admirable institution of its sort. His spirit was essentially progressive, so that reforms in the management, treatment and care of the unfortunate class committed to his hands found in him an early advocate and exemplar. He was possessed of extraordinary executive ability, great force of character and, above all, a comprehension of details which did not permit him to take the least rest and led him often to unnecessary worry and anxiety. His interest in the hospital and all that concerned it, indeed, was his whole life, and to it he devoted the best years and energy of his career. He has reared up a reputation for unquestioned probity which will be a monument to his memory, a sacred inheritance to his children and a bright example for his successor.

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[3] See tables 1 to 3 giving differences in moisture exhalation in *cold dry* as compared with *warm moist* atmospheres pages 4 and 5 in essay already mentioned, "The Preferable Climate for Consumption."

A rigid disciplinarian, he never spared himself, and it was in visiting a county jail in February, 1884, that he incurred an illness from which he never fully recovered, and during the last year of his life broke down physically and mentally, fortunately never seeming to realize the great change that had come over him. The immediate cause of death was apoplexy. Strangely, a sister, who with himself were the sole remaining members of his father's large family, died in Iowa only three hours before his own death. A widow, two sons and a daughter survive him, abundantly provided for by his judicious investments and a large insurance.

Richard D. Lee, M.D.

Dr. Richard D. Lee, a physician of high standing in Harford County, Md., died in the midst of his daily tour of professional duty; he died in the harness, as the saying is. He was found dead, probably through heart failure, in his carriage in the public road, near Bell Air. He was a graduate of the Washington University School of Medicine in 1848.

MISCELLANY.

MISSOURI STATE MEDICAL ASSOCIATION.—The thirty-third annual meeting of the Medical Association of the State of Missouri will be held at Excelsior Springs, Clay county, Mo., May 6, 7 and 8, 1890.

(Signed) L. J. MATTHEWS, Pres't.
J. C. MULHALL,
JOSEPH SHARP, Secretaries.

LETTERS RECEIVED.

J. G. Waters, Topeka, Kan.; Dr. Paul L. Brick, Le Mars, Ia.; Dr. L. F. Mansfield, Watertown, N. Y.; Dr. Theodore Diller, Danville, Pa.; First National Bank Stanford, Ky.; Dr. D. B. St. John Roosa, New York; Dr. Carl Seiler, Philadelphia; R. L. Polk & Co., Chicago; Dr. J. R. Holgate, Castleton, Ill.; The Advertisers' Association, Elmira, N. Y.; Longmans, Green & Co., New York; Dr. W. B. Henderson, Pittsburgh, Pa.; Dr. J. Chancellor Gilbert, Wessington, S. D.; Dr. H. C. Neer, Park Ridge, N. J.; Dr. Geo. W. Hinkle, Harvard, Ia.; Dr. D. Bryson Delavan, New York; Dr. J. B. Maxwell, Chicago; Dr. C. C. Lapeer, Braymer, Mo.; Atlantic-Pacific Railway Tunnel Co., New York; Dr. J. Z. Gerhart, Harrisburg, Pa.; Paris Medicine Co., Paris, Tenn.; Reed & Carnrick, New York; Dr. A. R. Baker, Cleveland, O.; Dr. J. C. Wilson, Philadelphia; Dr. J. P. Henderson, Salem, Ind.; Dr. R. S. Anderson, Grove City, Ill.; Dr. C. F. Darnall, West Union, Ia.; Dr. A. W. Nelson, New London, Conn,; Dr. S. P. Deahofe, Potsdam, O.; Dr. G. F. Cook, Indianapolis, Ind.; Dr. I. R. Spooner, Lake Preston, S. Dak.; Dr. L. G. Webber, Jamaica Plains, Mass.; F. A. Davis, Philadelphia; F. W. Nostrand, New York; Parke, Davis & Co., Detroit, Mich.; Rigaud & Chapoteaux, Paris, France; Dr. T. L. Wright, Bellefontaine, O.; University of Wooster, Cleveland, O.; Dr. H. A. Smith, Cincinnati, O.; George F. Lasher, Philadelphia; Dr. N. V. Spicer, Quincy, O.; J. H. Bates, New York; Philadelphia Truss Co., Philadelphia; Ed. L. Huntly & Co., Chicago; Mrs. J. A. Gorgas, Rogers Park, Ill.; National Type-Writer Co., Boston; Dr. I. N. Love, St. Louis, Mo.; Jackson County Medical Society, Kansas City, Mo.; T. J. Van Horen & Co., New York; James O'Gorman, Baltimore, Md.; Dr. J. C. Fisher, Warsaw, N. Y.; Dr. F. A. Merrill, Boston; George Tiemann & Co., New York; Dr. P. R. Cortelyou, Marietta, Ga.; Dr. Llwellyn Eliot, Washington; C. W. Holmes, Elmira, N. Y.; Dr. E. L. Shurley, Detroit, Mich.; Dr. L. L. Radcliffe, Washington; Dr. D. N. Rankin, Allegheny, Pa.; Dr. H. C. Mooney, Laketon, Ind.; Dr. C. H. McClees, Marne, Ia.; Dr. N. S. Stair, Ft. Atkinson, Wis.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from March 8, 1890, to March 14, 1890.

Capt. J. Van R. Hoff, Asst. Surgeon, is granted leave of absence for one month. Par. 1, S. O. 26, Hdqrs. Dept. of the Missouri, Ft. Leavenworth, Kan., March 5, 1890.

First Lieut. Edward R. Morris, Asst. Surgeon (Ft. Shaw, Mont.), is granted leave of absence for one month. Par. 1, S. O. 28, Hdqrs. Dept. of Dakota, St. Paul, Minn., March 7, 1890.

By direction of the Secretary of War, Capt. Junius L. Powell, Asst. Surgeon U. S. A., is relieved from duty at Ft. Supply, Ind. Ter., to take effect at the expiration of his present leave of absence, and will report in person to the commanding officer, Ft. Randall, S. Dak., for duty at that post, and by letter to the commanding General, Dept. of Dakota. Par. 8, S. O. 56, A. G. O., March 8, 1890.

By direction of the Secretary of War, Capt. Rudolph G. Ebert, Asst. Surgeon, now on sick leave of absence, is relieved from duty at his present station, Ft. Pembina, N. D., and will report in person to the commanding officer, Angel Island, Cal., for duty at that station. Par. 1, S. O. 57, A. G. O., March 10, 1890.

Capt. W. B. Davis, Asst. Surgeon U. S. A., leave of absence for seven days granted by order No. 9, Ft. Preble, Me., March 7, 1890, is hereby extended ten days. Par. 6, S. O. 58, Div. of the Atlantic, March 12, 1890.

THE
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ORIGINAL ARTICLES.

THE INFLUENCE OF SANITATION UPON OBSTETRICAL AND GYNECOLOGICAL SURGERY.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY THOMAS A. ASHBY, M.D.,
OF BALTIMORE,
FELLOW OF THE AMERICAN GYNECOLOGICAL SOCIETY, ETC.

It goes without saying that the age in which we live is one of immense progress. In whichever direction the eye is turned in the scientific field the evidences of an intelligent and untiring labor are presented. Contrast the status of scientific knowledge to-day with that of half a century ago and the immense gain in beneficent information and in useful fact is made apparent. In no department of scientific work is this gain more marked than in the domain of preventive medicine. Not only have the manifold causes of diseases been diligently and assiduously sought for and in numerous instances found, but astonishing progress has been made in the direction of preventing the spread of contagious influences and in modifying the effects of such influences when in actual force. The science of Sanitary Medicine has been revolutionized and reconstructed on a foundation of established principles. To the growth and evolution of these principles the entire practice of medicine and surgery now pays tribute. To the application of the principles of sanitation to professional work can be traced the largest results which have ever flown from a scientific doctrine.

It is not the purpose of this paper to attempt to trace the history of this progress in sanitary science, except in so far as it bears upon the special subject under discussion, viz., "The Influence of Sanitation upon Obstetrical and Gynecological Surgery." The object in view is to show the very important and beneficent effects which have resulted in obstetrical and gynecological surgery from the recognition and adoption of the principles of sanitary science, and how the further acceptance and enforcement of these principles will bring a larger measure of results than have as yet been witnessed. The scope of this subject will not admit of its brief discussion if the element of statistics is introduced at any length. An attempt will be made to treat the subject in as condensed a form as is possible, and to regard in a large and general way the lesson which may be learned from a philosophic view of the important facts under consideration.

Going back to the earliest history of medicine it will be observed that Hippocrates directed attention to the influence of air, water, diet, and clothing as factors in the causation of disease. From a general standpoint sanitation is as old as the records of the human race. In a more particular and special sense the growth of the important idea of sanitation is of very modern and recent date. The full influence of this idea has been made apparent in its best sense only within the past forty years. The birth of the modern principles of sanitation took place when Semmelweis demonstrated the influence of cadaveric poison upon the lying-in woman. The principle once established that the diseases of the puerperium originated in external influences the entire groundwork of the science of sanitation, as applied to obstetrical surgery, was relaid, and upon this foundation has been built the present superstructure. The results which have followed the recognition and observance of an external influence as an etiological factor have been so wide-reaching that the vast majority of diseased conditions are now referred to specific influences of external origin. The discovery of microörganisms and the establishment of the relation which they sustain to pathological states led the way to the successful study of specific influences. The essential principle in the causation and extension of disease was in this way traced to a specific factor, a *materies morbi* of recognizable aspect, of given demeanor, and of ascertainable character. Before the day of the microbe—when sanitary science was vaguely striking at imaginary etiological influences, at supposible miasms, at contagious principles lurking in the air, in clothing, in water, and in unseen places—the progress of sanitation was made only along lines of indirect observation. However earnestly attempts were made to destroy or intercept the march of the infectious and contagious principle such attempts were often futile in aim and reach in virtue of the fact that the principle was an undetermined character and quantity, obedient to no established law and controllable by no power then possessed. Is it surprising that sanitary science was so long in rising to its present plane of usefulness to the animal world when one considers the difficulties which hampered its environment? Nor is it less surprising to witness the progress it has made since the time of Semmelweis when a new impetus was given to its growth by the discovery of the principle of septic origin of disease by the direct introduction of a septic process. In order that the influence of sanitation upon obstetric surgery may be shown in its most striking and truthful aspect I shall present the statistics of puerperal mortality of the present day in comparison with those prior to and at the time of Semmelweis.

That the ancients were familiar with the diseases of the puerperium, grouped under the generic term of puerperal fever, there can be little doubt. It is more than probable that the lying-in woman from the earliest period of human society has been subjected to its ravages. References to epidemics of puerperal fever are not frequent until after the latter half of the seventeenth century (about the year 1664). About this time and during the next hundred years it made inroads upon the lying-in hospitals in Europe to an apalling extent. It prevailed in London during the years 1760, 1768 and 1770 to such a degree that nearly every woman confined in lying-in hospitals perished. A similar epidemic occurred in Edinburgh Infirmary in 1773 and it is stated that almost every woman as soon as delivered was seized with the disease and "all of them perished." In a number of different years it prevailed in the Maison d' Accouchement of Paris to such an extent that one woman out of three delivered died. In the lying-in hospital of Vienna in 1823, 19 per cent. of the women delivered in the institution perished, and in 1842 the mortality was as high as 16 per cent. The epidemic waves of puerperal fever which swept over Europe are said to have destroyed nearly as many lives as small-pox and cholera. In our own country we have not been without such epidemics, but in consequence of the fact that the lying-in institutions in America are of comparatively recent date statistics have not accumulated to the same extent as in Europe. Lusk estimates the mortality from puerperal fever in New York City from 1868 to 1875 as 1-146. The mortality from child-bed in the same city during the latter year reached the total of 420, from which it is fair to assume a large percentage as a result of diseases of the puerperium. During the year 1872, in the same city, the mortality reached a total of 502, the larger percentage being due to increase in cases of metria, those from ordinary accidents remaining nearly the same as in the previous year. During this year epidemic influences were notably present and the influence of atmospheric conditions laden most probably with a larger force of organisms may be assumed as a direct etiological factor in the mortality rate. Contrast the foregoing statistics with those of a more recent date which show the influence of sanitation. Goodell has stated that the mortality at the Preston Retreat in 756 cases was only two from septic disease, and Dr. Price, the present physician in charge of this same instution, has shown a still further reduction in this mortality from the enforcement of every known sanitary appliance. Winckel reports the deaths from metria in the lying-in institution in Dresden as 1.8 per cent., having fallen from 5 per cent. the previous year as a result of the enforcement of rigid measures for the prevention of disease. But take a more striking comparison. The mortality in the lying-in hospital of Vienna, which in 1823 reached 19 per cent., has fallen to the present rate of less than the half of 1 per cent. Take now the statistics of puerperal mortality in private practice as compared with that of maternity hospitals and the influence of sanitation is even more marked. In 1858 Tarnier showed that the mortality in the Paris Maternity was one in 19 whilst that in the city at large was only 1 in 322. In 1866 Lefort showed from his studies that in hospitals and in maternities the mortality was 1 in 29 whilst in cities it was one in 212. He adduced these figures to demonstrate the influence of contagion through the effects of greater crowding. The recognition of this fact led to the adoption of such methods of reform that results have flown in direct proportion to the enforcement of precautionary measures. Here the idea of sanitation asserted itself. The reforms instituted aimed first to purify the surroundings of the lying-in woman by a freer supply of pure air and less crowding and, second, to prevent contagious influences from gaining access through the agency of those in attendance on the puerpera. See the results of the enforcement of this idea by the statistics of Lariboisiére Hospital. In 1855, 467 labors took place in this institution with a total death from puerperal causes of 39 cases, 8.4 per cent. During the year 1878, 890 cases of labor took place with a mortality of 10 from puerperal causes, or less than .9 per cent. In the Marbourg Obstetric Clinic for the year ending March 31st, 1888, 308 women were confined with no deaths. In Leopold's clinic during the year ending May 1st, 1887, 1,403 women were delivered without a death from sepsis. In our own country Garrigues has shown from the records of the New York Maternity Hospital that from 1875 to 1886 the mortality from puerperal disease had fallen from 2.63 per cent. to .98 per cent. In whichever direction the search is made for statistics it will be observed that the lowering of the death-rate during the puerperium from septic processes has been in direct ratio to the acceptance and enforcement of the principles of sanitation. So marked has been this fact and so evident are the results of strict sanitation upon the destiny of the lying-in woman that in one or two European countries (Holland and Belgium I believe) the enforcement of strict sanitation upon the part of those engaged in midwifery practice is made a legal enactment with attached penalty for its violation.

The rapid growth of professional and public sentiment in support of thorough sanitation before, during and after confinement has done more to reduce puerperal mortality than all other agencies previously employed. But the influence of sanitation upon the welfare of the lying-in woman, as pronounced as it has been, only expresses half the debt of womankind to the principles which sanitation embodies. Authorities about agree that whilst labor is a physiological process it leaves woman in a pathological state and that she is indirectly exposed by virtue of the traumatism she receives to all the sequelæ of a surgical procedure. There seems then no rule applicable to the details of a surgical operation which should not be enforced in the management of labor. The two procedures—one natural the other induced—occupy analagous positions and respond equally well to the same principles of sanitation. So we find, as in obstetric surgery the sanitary idea has conquered a mission of widest influence and usefulness, so in gynecic surgery the sanitary principle has gained a triumph no less astonishing and beneficent. Through sanitation the abdomen has become the tramping ground for every manner of incursion. The peritoneum, at one time the *bête noir* of the laparotomist, now receives his friendly touches with kindly behavior and complacent composure. Experience has taught that the sanitary principle rigidly enforced is the *sine qua non* to success in abdominal work. The abdominal surgeon who dares to ignore the principles embodied in the teachings of preventive medicine does so in the face of all that is profitable in experience and commanding in authority. Whilst eminent authorities may differ as to the necessity for antisepticism, so-called, none dispute the principles of which asepsis is the central idea and cleanliness the watchword.

The influence of the aseptic idea upon abdominal surgery has been shown in such numerous instances that a statistical statement may seem out of place in this connection. I cannot refrain from calling attention, however, in this paper to the astonishing results presented by the work of Mr. Lawson Tait and of Dr. Bantock, both of whom are noted for the thorough attention given to the details of operative work and to the principles of sanitation. Mr. Tait has been able to record a total of 146 ovariotomies without a single death, whilst Dr. Bantock's record shows 86 successful cases in consecutive order. It has fallen to Mr. Tait's honor to record a total of 1,000 abdominal sections with the low mortality rate of 5.3 per cent. in contrast with the work of a great predecessor in this field whose first 1,000 laparotomies gave a mortality of 25 per cent. To what special factor can this difference in results be attributed? Apart from any special fitness or training upon the part of the individual operator the knowledge of a sanitary law will assert its influence in the decision reached. If we move faster than those who have preceded us, is it not fair to assume that this progress is largely due to the fact that we have caught hold of progressive ideas and principles and have been ready to accept and enforce such principles as the embodiment of a broad and rational system of scientific development?

Whilst then it will appear from the foregoing considerations that it has been the distinguished mission of sanitary science to reduce puerperal mortality to its present low percentage it is a most striking fact that sanitary science largely owes its present influence to the observations made during the puerperium and to the deductions made from such observations. It may be profitable to inquire how these mutual influences have been brought about. An examination of the status of sanitary science prior to the acceptance of the doctrine of specific infection will show that the laws of sanitation were so general in their application and so indefinite in their aim that general results only followed their enforcement. So long as the causation of disease was involved in obscurity just so long were the means of arresting or destroying causative influences imperfect in design and in effect. An imperfect conception of an etiological factor implied an imperfect application of the methods of combatting causative influences. Our present knowledge of the behavior of contagious and infectious miasms and our knowledge of the means of arresting or of preventing their influence is based upon a knowledge of their individual characteristics, mode of development, manner of action and form of expression. This knowledge of cause and of effect has made more reliable those methods of sanitation which deal with causative influences. The perfection of the principles of sanitary science rests essentially upon such knowledge. The Ancients knew thousands of years ago that foul air and impure water were causes of disease. This knowledge is instinctive in many forms of animal life. Yet whilst this was true human society profited but little by such knowledge until it was further shown that epidemics and pestilential diseases were likewise referable to atmospheric influences. But sanitary science still labored in the dark when it merely dealt with impure air, food and water. Its principles were only in part known, and only partially understood; it dealt in the most rudimentary way with the origin and spread of contagion and infection. The evolution of the science of preventive medicine has only moved from this crude domain of general principles to a plane of high art and specialized function since it entered upon the study of the etiology of disease from a standpoint of microbiology. The belief in a poison germ first came and then the methods of preventing the development and spread of this germ followed, but this idea, as great as it was in advance of former ideas, was not sufficient. It was not until the microscope revealed a world of organisms at peace and at war with the animal economy, many rendering important service to animal life, others destroying animal life in manifold ways, that the study, arrangement and classification of microörganisms, the discovery of their influence upon fermentation, putrefaction and as carriers of disease, the recognition of their presence in zymotic and infectious diseases were successfully worked out. These studies in microbiology led to such an understanding of the nature and cause of disease as to bring into successful operation approved methods of arresting and preventing diseased processes. The progress of scientific enquiry has largely, if not conclusively, confirmed the opinion that as all ferments are living organisms so all contagia are allied living organisms. The special organism in its causal relation to a special disease has been determined in too many instances to admit of doubt as to the existence of specific bacteria as a special factor in the causation and extension of diseased processes. From the date of the discovery of certain rodlets in the blood of animals suffering from splenic fever by Pollender in 1849 down to the present time the causal relation between bacteria and disease has been strengthened and confirmed by the most careful investigations. The discovery of the bacterium of relapsing fever by Obermeyer followed in 1873. The discovery of the bacillus tuberculosis by Koch in 1882 was a most important advance in establishing the truth of the germ theory. Next came the important observation of Koch in 1883 on the comma bacillus of cholera. Discovery of one microbe after another has followed until it is now well affirmed that there is a microörganism of syphilis, of gonorrhœa, of malaria, of whooping-cough and pneumonia, of typhoid fever, diphtheria and erysipelas, of septicemia, pyemia and tetanus. The doctrine of spontaneous generation, no longer tenable, gives place to the germ theory that no life is evolved save from a living germ. The importance of this principle—now accepted by the most reliable observers as an established fact—has been affirmed by the statistics of modern medicine and sur[illegible] n no mistakable language. Sanitary science with its principles of cleanliness, of disin[illegible] asepticism has lifted the practice of medicine and surgery to their present plane of successful combat with microörganisms. Medicine and surgery on the other hand by the acceptance of the principles of sanitation have strengthened the influence of the sanitary idea until it has been broadened into a science of modern microbiology, preventive medicine and aseptic surgery.

I have now attempted to show that the discovery of an external influence of septic origin was the first step in the direction of arresting pathological states dependent upon contagious and infectious conditions. If diseases originate from disease germs, whether manufactured within or external to the human economy, the prevention and cure of disease must be undertaken from a standpoint which aims to combat such germs. It has been shown that when once the germ has gained access to the human economy its growth is so favored by conditions that a combat with its influence must be waged at a great disadvantage. Those agencies which destroy bacteria also destroy human tissues and it is an unequal contest which science wages with germicides against bacteria safely housed in the fluids and tissues of the body. Science has yet no specific germ destroyer of safe internal administration. Quite evident is it that the great aim of science is in the direction of preventive medicine which seeks to arrest all forms of bacterial development *in embryone* as it were, and thus intercept their disastrous influence as promoters of disease. The conditions under which microörganisms develop and multiply, the modes by which they are carried from place to place, the pernicious influence they are capable of establishing are now pretty well understood. Through the agency of air, water, food and clothing, through moisture, warmth and all uncleanliness, through putrefaction, stench and imperfect drainage the various organisms find ready avenues of travel and all the conditions necessary to their culture and activity. Sanitary science has discovered these facts, aseptic medicine and surgery have confirmed them. The general recognition of these facts alone is now needed to secure the immense results which are destined to follow the acceptance and enforcement of the sanitary principles in their integrity. Just so soon as the entire profession of medicine is brought to a position from which all professional work is made to conform to the universal law of sanitation, from that moment will the statistics of mortality from all preventable diseases reach the lowest possible limit. But the general enforcement and acceptance of the laws of sanitation by the profession of medicine are wholly inadequate to the purpose. The public mind must be educated up to the full understanding of the important influence of strict sanitation upon the public health. This can only be done through intelligent and liberal legislation, through wise and well-trained public officials, through efficient health organizations, and lastly through the intelligent coöperation of the citizen. Is it a utopian scheme to hope for such intelligent action and large acceptance of the principles of sanitation as are here outlined? Let those answer who have witnessed the progress of preventive medicine within the last quarter of a century. So long as human society is cradled in the lap of ignorance and folly, just so long will its growth be hampered by its surroundings, but as society rises in intelligence and into the liberty of a rational and enlightened conception of its wants and necessities we may expect it to accept and adopt those higher principles of social government which will perpetuate its existence in the most perfect form. The conclusions which may be drawn from the foregoing general consideration may be summed up in brief as follows:

1st. The doctrine that diseases of the puerperium and the pathogenic processes following surgical procedures are of bacterial origin is now universally accepted by scientific authorities. This opinion asserts the idea that diseases are of septic origin, that they are introduced from external influences and do not originate *de novo* in a given case. This view annuls the doctrine of spontaneous development of microörganisms and traces their origin to antecedent conditions.

2nd. The acceptance of the doctrine of external origin of microörganisms implies the necessity of preventing their cultivation and propagation before they have gained access to the human economy.

3rd. The science of sanitation has for its mission the destruction of microörganisms and the prevention of all pernicious influences which would arise from their propogation.

4th. The principles of sanitation are entitled to the utmost consideration and enforcement in all methods of medical and surgical work. These principles insist upon the employment of every known means of preventing and of arresting diseased processes dependent upon bacteria by the removal of all conditions which favor the development and conveyance of such bacteria.

5th. The medical profession is now fully cognizant of the various agencies through which diseased germs originate and the numerous channels through which they are introduced into the human economy. It therefore becomes the solemn duty of the medical profession to give full support to the teachings and principles of preventive medicine and to advocate the fullest acceptance of such teachings and principles by the general public through regularly organized channels of public sanitation and through appeals to intelligent citizenship.

ONE YEAR OF ACETANILIDE IN PEDIATRIC PRACTICE.

Read in the Section of Diseases of Children at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY I. N. LOVE, M.D.,
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Carbolic acid and its allies, all products of coal-tar, have been demonstrated to be of great value.

Of this class none, in my judgment, are superior to acetanilide. This substance was prepared as early as 1853 by Gerhardt, by the action of aniline upon acetychloride, or anhydrous acetic acid, but up to a year or so ago it was not known to possess valuable medicinal properties.

The discoverers of the fact—Cohn and Hepp—that the drug possessed excellent therapeutical qualities gave it a new name, supposed to be more appropriate for use in prescribing, namely, "antifebrin," which name is protected by patent laws, and only the authorized makers and agents can use this term.

"Acetanilide" is in every respect identical with antifebrin, but possesses this advantage, that it is cheaper, and in specifying it we do not cater to the patent medicine trade. It forms colorless, shining plates, melting at 233.6° F., boiling at 563° F. It is almost tasteless, but after a time a slight burning sensation is produced upon the tongue. It is somewhat insoluble in cold water, more readily soluble in hot water; very freely so in alcohol or alcoholic solutions.

It possesses neither basic nor acid properties, and is not readily attacked by most reagents.

In general, my experience has convinced me that acetanilide is about three times as effective as antipyrin in promptness, duration, and extent of action, and is certainly less depressing and correspondingly dangerous. I might readily pay tribute to the value of the drug in adult practice for the relief of violent neuralgias, facial and sciatic; high grade fevers, typhoid and malarial; the discomforts of gout and rheumatism—but this is not the object of this paper.

It is my purpose to present the epitome of one year's experience of the use of acetanilide in the treatment of diseases of children. This experience is a complete endorsement of the announcement of Widowitz in favor of its peculiarly safe and steady action in children up to 4 years of age, or twice or thrice the amount in those older.

When the drug is given for its analgesic effect, where the temperature is normal, it requires eight times the amount to secure the fall of one degree of temperature that it does when fever is present.

At the last meeting of the British Medical Association, at Glasgow, Scotland, Dr. J. Theodore Cash made a most elaborate report in the Section of Pharmacology and Therapeutics upon acetanilide and its kindred. He stated that when it is and lastly, that there are regions in the central nervous system which are in some way connected with these nerves, and through them control the chemical processes resulting in heat production."

The more we study the fever problem the stronger the conviction that a large part of our treatment should be directed towards tranquilizing the nervous system and aiding elimination, not forgetting nutrition.

In acetanilide we have a remedy, I think, which reduces high temperature by its beneficial effects upon the nervous system.

In this drug, carefully and judiciously used in conjunction or alternating with the cooling bath or the wet sheet, we have the sheet-anchor of safety to our fever patients.

WHOOPING-COUGH.

It is surprising that the opinion obtains so freely among the people that this disease is a trifling one and not much amenable to treatment.

We do not need to refer to the mortality records of England and Wales, which are so perfectly kept, and which prove that whooping-cough ranks third in the fatal diseases of infancy in England.

The complications which may accompany the disease are the cause of its fatality. Whether the microörganism of pertussis described by Burger, of Bonn, be established or not, there can be no doubt of the fact that the disease is caused by a special germ.

In our treatment the most we can do probably, as yet, is to guard our patients from the possible complications.

After treating fifty cases of whooping-cough with acetanilide, I am convinced we have a valuable remedy for the disease. Given in doses of from 2½ to 5 grs. every two to four hours, according to age, we can materially mitigate the severity of the paroxysms and reduce their frequency. By the judicious administration of the remedy, coupled with proper attention to diet, clothing and an open state of the alimentary canal, we rob the disease of three-fourths of its discomforts, terrors and dangers.

CONVULSIONS.

In November, 1888, in a paper read to the McDowell Medical Society, of Kentucky, on "Infantile Convulsions," I testified as follows: "In acetanilide I am sure we have an excellent remedy for the relief and prevention of convulsions. Clinical experience for one year justifies the conclusion. In confirmation of my own experience of its value in the convulsive diseases, I note the fact that Dr. H. H. Moyer, in the London *Medical Record* of August 20, 1888, reports favorably on its use in epilepsy, in 5 gr. doses three times daily."

Seven months' additional clinical experience endorses the position taken above.

CHOREA.

Three cases of chorea in girls ranging from 7 to 14 years of age have been more benefited by the acetanilide—in doses of 5 grs. from three to four times daily, as indicated, coupled with proper nutrition and tonics—than by any other plan of treatment. The recovery was more prompt.

After more than eighteen months' experience in the use of acetanilide for many of the febrile, spasmodic, and painful disturbances of childhood—a record of its use upon 600 children, together with at least 500 unrecorded cases, kept for purpose of comparison with past experiences with other drugs for similar conditions—I feel justified in arriving at the following conclusions:

1. Acetanilide, carefully guarded and properly used, is a safe and reliable remedy in the diseases of infancy and childhood.

2. Whether used for the antipyretic, analgesic, or sedative effect, it is preferable to antipyrin in that the result secured is of longer continuance and the depression is not so great.

3. The cyanosis which sometimes results from its liberal use is not uniform, and, while it is not an agreeable feature, my experience corroborates that of other observers to the effect that it soon passes off and is not accompanied by danger.

4. It is not desirable, in reducing temperature, no matter what means be employed, to use them in excess to the extent of securing sudden and great reduction. Especially is it preferable, in using acetanilide for antipyretic purposes, to give it in medium doses to the extent of keeping the temperature down to a reasonable point—in the neighborhood of 100° F. It is better to give small doses and repeat them more frequently, rather than large ones at long intervals.

5. It is of great value as a controller of temperature in the various fevers, whether they be caused by the typhoid germ, malaria, or the exanthemata.

6. It serves almost as a specific in whooping-cough, not in aborting the disease, as it has a definite course to run, but in mitigating the discomforts and controlling the paroxysms of the same.

7. Acetanilide, while of great value and surely safer than antipyrin, is no exception to the rule that obtains with all drugs. It should be handled carefully, administered judiciously, and under no circumstances should the public be educated in its use.

The time has come for the profession to call a halt and endeavor to check the reckless use of medicines upon the part of the people. The secular press, in disseminating information regarding the action of drugs, gleaned from medical sources, is to a large degree responsible for the drugging habits of the people; but the medical profession is not blameless in the matter, in that many physicians verbally advise the purchase of many drugs by their patients, and carelessly and thoughtlessly impress them with their harmlessness.

8. Medicines, which are nothing more than the tools by which the physician hopes to accomplish certain ends, should no more be left in the hands of an uninformed lay public, to use at their pleasure, than should the equipments of a surgeon's office or the accoutrements of a standing army (all intended, if properly used, as a protection to the lives of the citizens) be recklessly placed in the hands of children, or those unskilled in their use.

If the members of our sister profession of pharmacy do not become imbued with the above thought, and act upon it, physicians may be forced to supply themselves with a part, at least, of the medicines needful to cope with disease, feeling that the attending inconvenience will be more than compensated by a knowledge of the fact that they will have a more definite control over the drugs administered to their patients.

THE AMETROPIÆ AND THEIR RELATION TO INSUFFICIENCIES OF THE RECTI MUSCLES.

Read by Title in the Section of Ophthalmology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY JOHN W. WRIGHT, M.D.,
OF COLUMBUS, O.

The normal functions of the orbital muscles, when the eye is considered as a monocular organ only, are complicated; when we study their actions in connection with binocular vision, their offices appear confused in the extreme; but when, in addition, there exists an abnormal condition in the action of one or more of these muscles, then we have a perplexing skein to untangle. Such has the subject of insufficiencies of the orbital muscles proven itself to be.

In seeking a remedy for an affection, we do so more intelligently by first searching for the underlying condition of which the symptoms are but the declaration. Hence in asthenopia of the orbital muscles, as in all other affections, we would, as far as possible, trace all symptoms back along the line of causation to their ultimate origin. We are thus necessitated to consider some of the most noticeable and common affections of the ocular muscles, whose conditions are attributed to refractive abnormalities.

For the purpose of being clearly comprehensible, the subject will be discussed in the following order:

1. Does an error of refraction contribute in any manner to muscular asthenopia?

2. What is the *modus operandi* of the impairment of the function of the ocular muscles in ametropia?

3. Will rendering the eye emmetropic contribute in restoring the weakened muscle to its normal condition?

The only difference between muscular asthenopia and strabismus is that in insufficiency there is temporary inability to maintain binocular vision, while in strabismus the inability is constant. Muscular asthenopia implies an inability to bring both visual lines to bear *constantly* upon one point. In strabismus there is inability to bring both visual lines to bear upon one point *at any time*. In muscular insufficiency, then, the muscle is partially disabled, and is enabled only a part of the time, and then with considerable effort, to perform its functions; while in strabismus it is totally disabled from performing these functions.

We are fully cognizant of the influence of hyperopia and myopia upon the induction and maintenance of convergent and divergent squint.

Observant oculists have noted that from 75 to 85 per cent. of all cases of convergent squint are hyperopic, and in the divergent there is even a larger per cent. of myopia. This alone adequately demonstrates the influence of the ametropiæ upon the functions of the orbital muscles.

As we all well know, it does not follow that all cases of hyperopia and myopia are the subjects of muscular asthenopia, the occupations of the ametropic having much to do in developing this affection.

In order that the eye may deviate from its normal position one of two conditions is necessary: there must be a physical or functional weakness of one muscle, or set of muscles, from which the eye is deflected, or an excessive strength of a muscle or set of muscles, toward which it becomes directed.

In simple hyperopia and myopia how is this accomplished?

2. *The Modus Operandi.*—In hyperopia the patient is compelled to accommodate in order to focus the rays of light upon the retina and make the image more distinct. The greater the degree of hyperopia the more he is compelled to exert his accommodation. Accommodation produces convergence, and the long continued effort of accommodation for this reason makes the convergence permanent.

In a few cases of hyperopia the muscle is not able to stand the long continued strain at convergence, and in order to avoid confusion of images or diplopia, the eye is instinctively turned out and entirely away from its fellow. Thus in hyperopia we occasionally have a divergent squint.

In myopia, as is well known, the patient sees well and often without effort of accommodation, when the object is brought to a very near point; hence, in order to obtain binocular vision, one or both eyes must become abnormally converged. The greater the degree of myopia, the more convergence is necessary in order to maintain binocular vision. The effort being irksome, and the work too fatiguing to accomplish with both eyes simultaneously, as is especially the case when there is much near work to perform, one eye is disregarded and involuntarily turns out, far enough away from its fellow, that there may be no confusion of images.

In those cases of myopia which are accompanied by convergent squint, the myopia is usually of small degree, and the amount of convergence is not so great but that the internal recti muscles may become orthopædically trained and strengthened by use for near work. In this case it is usual for one eye to become permanently convergent, and able to perform only near work, while it entirely disregards objects for a far point.

As myopia is the most common cause of divergent squint, it is evidently the greatest factor in the cause of insufficiencies of the internal recti muscles.

Myopia is Real or Factitious.—It is real if, when there is complete relaxation of the accommodation, the measurement shows that the retina is situated behind the principal focus. It is *factitious* or *forced* myopia, if the ciliary muscle is cramped in such a manner as to cause the crystalline lens to become so convex that parallel rays of light in passing through, meet before reaching the retina. This condition, as we all know, is frequently acquired in eyes that are emmetropic, and even in small degrees of hyperopia.

So far we have had under consideration the causes whereby the muscles have become *permanently* deranged, so that we may be more thoroughly equipped for the discussion of that other condition of the ocular muscles wherein they become *temporarily* unable to perform their functions.

Now it is a matter of very little importance whether the eye is *really* or *factitiously* myopic, or is hyperopic, the conditions for the production of weak internal recti muscles are exactly the same; that is, in myopia, to recapitulate, the patient must place the object close to the eye in order to obtain binocular vision. The greater the degree of myopia, the more convergence, and the more constant the effort at convergence the more strain on the internal recti muscles; hence the asthenopia.

In hyperopia the patient accommodates to cause the lens to become sufficiently convex to focus the rays of light upon the retina. As accommodation causes convergence, the more he accommodates the more he converges, and the greater the strain upon the internal recti muscles.

We can converge without accommodating, but cannot accommodate without converging. If the patient could accommodate without converging, then there would be no strain upon these muscles, hence no asthenopia in hyperopia.

As heretofore mentioned, the internal recti muscles are most frequently affected with the inability to properly perform their functions; although the external recti muscles are occasionally thus affected. This condition is produced in one of two ways: either, first, by a permanent contraction and increased strength of the internal rectus orthopædically obtained—that is, acquired by moderate and continued effort at convergence; or second, by a spasm or cramp of the internal rectus caused by an over-exertion of that muscle In either case the result is the same; the external rectus is weakened by the long continued strain upon it.

I am now confident that this cramp or spasm from overworked muscles plays a very important part in the production of insufficiencies, and I am also sure, because I have seen it practically demonstrated, that spasm of the ciliary muscle is an equal, or perhaps the most important, factor in the development of muscular asthenopia.

A muscle will not become weak without a cause. Even if it becomes cramped and spasmodically contracted (functionally strengthened), it is an evidence of weakness and not of tone. Cramp or spasm is a result of its weakened and overworked condition; and for this reason I believe there are very few cases of insufficiency without an error of refraction, either real or factitious; and the forced error is certainly the more productive of this condition.

Let us inquire *how* this may be accomplished.

Martin, I believe, advanced a theory of segmentary or unsymmetrical or, in other words, irregular contractions of the ciliary muscles, whereby the lens became irregularly curved or astigmatic. We have good reason for believing that the theory is correct.

We have all of us seen eyes which have presented all the evidences of astigmatism, simple, compound, mixed or irregular, which, after the accommodation had been thoroughly suspended under atropine, have been found to be emmetropic. Now there was a functional defect somewhere before the accommodation was suspended, and that defect could have been in but one place—the crystalline lens.

Moreover, we occasionally meet with cases that do not show any evidence of astigmatism until after the accommodation is suspended. In these there is corneal astigmatism which has been compensated for in the lens by its assuming such a shape as to correct the corneal irregularity. Donders was the first, I believe, who brought to notice this condition.

We are taught that the *macula lutea* receives the impressions of images, and that it is the "sensitive point," that the images received at other points of the retina are not so distinct, hence it is the effort of the orbital muscles to so balance the eye that the impressions may be received on this particular point.

We know the influence upon the ocular muscles where there is a clear spot of cornea on an extensive opacity. The eye involuntarily assumes that position in which the rays of light will best be received on this particular portion of the cornea, so as to fall as nearly as possible upon the yellow spot, and thus secure the best possible vision that can be obtained under the circumstances. So also in other cases, where there is from any cause a removal of the pupil from behind the centre of the cornea to some other portion, the eye adapts itself to that position in which it can receive the best vision. To do do this one muscle or set of muscles become strengthened, and their antagonists correspondingly weakened.

Now we know that any abnormal change in the curvature of the crystalline lens will change the angle of vision and, upon the same principle as in corneal opacities and abnormal positions of the pupils, disturb the equilibrium of the eye by its influence upon the ocular muscles.

If, then, certain changes in the curvature of the crystalline lens are productive of insufficiencies of the internal and external recti muscles, certain other changes will also account for asthenopia of the superior and inferior recti.

To summarize thus: When an eye turns in, or out, or up, or down, or in any manner away from its normal position, there is one of two conditions existing. It does so either to place itself in such a position as to receive a better retinal image, and thereby assist both eyes to bear upon the same point; or to place itself in that position that binocular vision will be entirely disregarded in order to avoid the confusion of images.

My experience has taught me that the low degrees of ametropia are, perhaps, more fruitful in the causation and maintenance of muscular asthenopia than the high, because of the strained effort to maintain binocular vision; for as heretofore explained, in the high degrees one eye is disregarded and the patient uses the other, while in the low degrees binocular vision can be maintained with some effort, which, however, if too steadily persisted in, produces fatigue.

From this consideration of the subject, the conditions which contribute to insufficiencies may be summarized as follows: *Myopia*, *hyperopia*, *astigmatism* and *overwork*, the latter being the exciting cause, which is more or less augmented by additional refractive error.

In considering the conditions which tend to the abnormal change of the visual angle, it would seem that the *punctum saliens* in the treatment of insufficiencies of the internal recti, is to prevent great and long continued efforts at convergence, and thus relieve the inordinate contractions of these muscles. Nothing will contribute so much to this purpose as remedying any refractive error, and thus rendering the eye as nearly emmetropic as possible.

3. The indications for treatment must necessarily be brief.

Although not entirely ignoring operative procedures, it must be acknowledged that tenotomies have not afforded the brilliant results so ardently claimed for them by their supporters. A tenotomy is prejudicial for one very serious reason: the movement of the eye is curtailed, and if the operation is successful in effecting fusion of images at a near point, there is usually too much restriction of motion for a distance, hence an annoying diplopia follows, which for persons engaged in the ordinary pursuits of life is much worse than the insufficiency.

I am seriously impressed that operative procedures should be a *dernier ressort,* when all other means have failed—then advancement of the weak muscle, instead of tenotomy of the strong. There is not then the risk of diminishing the movements of the eye.

My experience has induced me to believe that there is a very intimate relation between spasm of the ciliary muscle and insufficiencies of the orbital muscles. I rarely now make an examination for refractive error, without making the test for insufficiency, and I have been surprised at the frequency with which I have met this affection.

Although insufficiency of the internal rectus is far the most frequent, yet the test will frequently disclose it in the other orbital muscles, and especially in the superior and inferior recti.

The examination now referred to is rather a preliminary inspection, for we can rarely determine correctly the refractive condition of an eye without its thorough atropinization. The accommodation requires to be thoroughly suspended before an attempt is made at correction with glasses. This is important, whether there appears to be an insufficiency or not in connection with the refractive error, for the reason that after the eyes are thoroughly atropinized we usually find them in a very different condition from that shown at the preliminary examination. What was then regarded as myopia, now turns out to be emmetropia, or perhaps hyperopia. What appeared a well-marked astigmatism is now neutralized, and insufficiencies frequently disappear.

I first began making observations relative to the influence of spasm of the ciliary muscle upon the recti muscles in August, 1888, since which time I have had sixteen cases representing marked insufficiencies, some of the internal recti, a few of the superior and inferior, and one of the external rectus, all of which have entirely disappeared under the use of atropine.

Some of these cases marked an astigmatism, but after the thorough relaxation of the accommodation, the astigmatism in nearly all the cases vanished with the insufficiency.

I will report here two of these cases as representatives of the conditions herein described.

C. S. M., railway clerk, æt. 32, called February 8, 1889. Was suffering much from defective vision. The letters appeared blurred, and the letters and words ran together. Suffered from vertigo and insomnia, and occasionally experienced an annoying tremor in his left eye. It was impossible for him to continue his work but a short time, when he was compelled to rest his eyes before proceeding farther.

The preliminary examination revealed nothing particularly in the way of refractive error, as neither a + nor — glass made any perceptible improvement. A test for insufficiency, however, developed an insufficiency of the interni 3° at 20 feet, and 12° at 1 foot. I recommended thorough atropinization by the use of a 4 gr. solution, applied to the eyes every six hours, which was continued for twenty-four hours.

February 9. R. E. = $\frac{20}{20}$ with + 30; L. E. = $\frac{20}{30}$ with + 40. Atropine ordered continued twenty-four hours longer.

February 10. R. E. = $\frac{20}{20}$ with + 30; L. E. = $\frac{20}{30}$ with + 30 best.

I now made the test for insufficiency by use of the prism in connection with the correcting glasses, and found that the insufficiency had entirely disappeared. He was now prescribed a + 50 for each eye and instructed to wear them constantly, and when the accommodation was fully restored, to report.

February 23. Patient called and expressed himself as being well satisfied with the glasses. Could work all day with ease, suffers no more from vertigo, and sleeps well all night.

April 10. Patient called and complained of tremor of left eye, and a partial return to old symptoms, as blurring of letters and vertigo. Examination revealed the same degrees of insufficiency as before—3° at 20 feet, 12° at 1 foot.

As vision appeared more nearly perfect at a distance in both eyes with + 40 than + 50, I prescribed the former and, as all the trouble appeared to be with the left eye, ordered the atropine solution continued in that eye, three times daily for one week.

June 15. Patient called and informed me that he has suffered no inconvenience from either eye since the atropinization, more than two months ago, although he has had an extra amount of work to perform. The examination revealed no insufficiency whatever.

Miss O. C., æt. 17 years, has suffered so much from defective vision that she was compelled to quit school.

May 18, 1889. R. E. $\frac{20}{30}$ with + 24 cyl. ax. vert.; L. E. = $\frac{20}{50}$. No improvement with glasses. Insufficiency external recti 3° at 20 feet, nothing at 1 foot. Eyes ordered under atropine every six hours for twenty-four hours.

May 19. R. E. = $\frac{20}{20}$ with + 7; L. E. $\frac{20}{30}$, best with + 7. Eyes kept under atropine twenty-four hours longer, and the same glasses gave the best vision as yesterday. There is now no astigmatism nor insufficiency.

A + 12 was prescribed for each eye, and the glasses were ordered to be worn constantly. June 19 I again saw the patient, and vision is $\frac{20}{20}$ with both eyes under the correcting glasses.

133 E. Spring St.

EMPYEMA OF THE FRONTAL SINUSES.

Read in the Section of Laryngology at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY GEORGE A. RICHARDS, M.D.,
OF NEW YORK.

A subject of which comparatively little mention is made in most of the treatises on surgery and diseases of the nose, but which, on account of the great distress and many accidents liable to occur, deserves more consideration, is empyema of the frontal sinuses. Some of the text-books on diseases of the eye give a very good description of the disease with its symptoms, course and treatment. The periodical press is, however, the source from which to draw material, and this has paid liberal tribute in the compilation of the following paper.

We wish to record a case occurring in the service of Dr. S. O. VanderPoel and the writer at the Vanderbilt clinic, New York, and will then give the results of the study of forty-eight other cases collected from medical literature. Only those cases with fairly complete histories have been accepted, and of these there are some in which many important points have been omitted in the description.

Case.—Horatio N., æt. 57, United States. Forty years ago patient dealt in plaster of Paris; this caused a chronic rhinitis, from which he has suffered ever since. Fifteen years ago a polyp was removed from the right side of the nose. This returned, and nothing has been done for it during the last thirteen years, during which time he has had difficulty in breathing through the right side of the nose and a pretty constant discharge until three years ago, when the right side of the nose became absolutely occluded. He has been troubled with frequent "colds," accompanied by much headache and some frontal pressure. At these times there have been much epiphora and slight ptosis on the right side. For six years he has noticed failing sight, especially of the right eye, and a marked loss of memory and of the power of application. This was sufficient to cause interference with business. The senses of smell and taste have also been diminished.

Eight months ago patient noticed a swelling at the root of the nose on the right side, at first small, gradually enlarging without any pain, but with a constant feeling of distension in the frontal region. This was accompanied by occasional flushing, but never by any chilly feelings. The size of the swelling was about that of a small cherry, but varied somewhat, being larger in the evening than in the morning. When it was large the discharge was increased and was thick, ropy and greenish-yellow. The patient slept well, ate well and felt well, except for the mental depression.

He thinks the right eye has been too prominent at times, but has never had any diplopia. Examination showed right side of nose completely filled with polypi. After several sittings, in which over twenty polypi of different sizes were extracted, pressure on the swelling caused discharge of very foul-smelling pus from nose; this appeared about opposite the middle turbinated bone. The anterior portion of the middle turbinated body was the last to be cleaned. An opening was then made into the external swelling from without, and the entire tract washed out with a solution of carbolic acid. Forced expiration caused the passage of pus, water and air through the wound when nose and mouth were closed. After a few days a perforated rubber drainage tube was put into the nose through the opening, and thereafter the parts were cleansed thrice daily. The relief to all symptoms was marked and immediate. The tube was removed and the wound healed in less than one month; and now, six months after, the change in the patient has been very great.

The disease may be due to a primary inflammation of the mucous membrane. This might cause an acute or chronic obstruction of the infundibulum, and so a retention of pus. Probably the majority of cases in which no cause can be remembered belongs to this class, a coryza being such an unimportant episode as not to be recalled after the lapse of a short time. Of the forty-eight cases acute obstruction is mentioned in but three. Large turbinated bodies and polypi were found in only four cases; and foreign bodies, such as bullets, metal, maggots, flies and other insects, as well as diseases, such as syphilis, glanders, caries and necrosis, are very rare in the causation of this disease. Injuries by blows or falls caused fourteen cases, distributed equally between males and females. Thus, there was over half the entire number in which no known cause could be given. In view of the fact that most of these cases occurred before it was the rule to examine the nose of patients so affected, or in the practice of men who were not accustomed to this examination, we can not say how much greater the proportion of cases caused by blocking up of the infundibulum by some intra-nasal disease would be. It is our belief, however, that many of the cases in which "no cause" is stated were the result of stenosis of the passage by polypi, large turbinated bodies, hypertrophic rhinitis, or inspissated mucus. Thus the statement of Bader[1], that eight in nine cases result from injury, is rather inexact. the disease being, as a rule, the result of a more or less intense catarrhal inflammation of the mucous membrane of the sinus.

In the very acute cases, it may be severe enough to cause rapid accumulation of pus; in the more chronic cases it may cause distension by mucus, this resulting in irritation and the production of a greater or less amount of pus, which is mixed with the mucus. In a few cases the trouble may have been caused by a periostitis followed by necrosis, and this by inflammation of the lining membrane of the sinus.

When accumulation of pus or muco-pus occurs sufficient to cause distension, the orbital plate of the frontal bone, being the thinnest and least resisting wall of the sinus, is the first to give way, and so the swelling in the majority of cases occupies a position at the inner and upper part of the orbit and at the root of the nose, just at the junction of the nasal, superior maxillary and lachrymal bones with the frontal, above the attachment of the tendo oculi. This is an important point in diagnosis, for the swelling has been mistaken for a distension of the lachrymal sac. In a few cases the swelling has occupied a position just above the supraorbital ridge; in these cases there was probably more necrosis than absorption of bone. Perforation of the posterior wall of the sinus is not a very infrequent occurrence.

Of forty-eight cases, twenty-four males and nineteen females were the subjects of the disease; in five cases the sex was not mentioned. There is no apparent reason why one side should be involved more frequently than another; yet we find the left side affected twenty-one times, against twelve cases in which the right side was the seat of the disease. A simultaneous involvement of both sides is exceedingly rare. In fifteen cases no mention is made of the side. The age of males varied between 13 and 69 years, averaging 35 years. The average age of females was 32 years, the youngest being 10 years old, the oldest 66 years of age.

In fourteen cases of injury there was no preponderance of either sex, though it would naturally be supposed that the rougher occupations of the male would render him more liable. A peculiarity in those cases resulting from injury is the length of time which elapses between the infliction of the injury and the appearance of troublesome symptoms. Lawson[2] mentions a case in which fifty-four years elapsed between injury and seeking relief. The time varied between one and twenty-four years in fourteen cases. On the other hand, in the acute cases only eight days may elapse, or patients may suffer several weeks or months before consulting a physician.

In the very acute cases the symptoms are frontal pain and oppression, the pain sometimes radiating along the course of the supraorbital nerve; excessive headache, some fever, chilly feelings and general malaise, together with the symptoms of an ordinary coryza, inability to breathe through the nose, discharge of mucus, muco-pus or sero-pus, sneezing, and lachrymation. There may be swelling, œdema and an erysipelatous blush over the site of the sinus involved. These cases have been mistaken for true erysipelas.

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[1] Bader. The Eye and its Natural and Morbid Changes.

[2] Lawson. Practitioner, London, 1870, v, pp. 8-12.

The subacute cases present the same picture in a modified form.

In the chronic cases, which include the vast majority, the invasion is very insidious—a feeling of distension in the frontal region, pain, which may be severe, but is generally slight; a more or less constant discharge from the nose is a frequent symptom. Sooner or later a swelling appears; this is accompanied by but little pain, and at first is so hard as to have been mistaken in several cases for an orbital or frontal exostosis. A sense of fluctuation, obscure at first, gradually becomes marked by the absorption of the bone. The swelling finally may grow so large that it presses the eyeball downward and outward, causing marked exophthalmos, as in the eleven cases recorded by Hulke[3], Lawson[4], Wells[5], Thompson[6], Bull[7], Michaelis[8], Otto[9], and Warren[10].

Failing sight is a somewhat frequent occurrence, having been present in eight cases. Occasionally vision becomes better or worse, according as the swelling decreases or increases in size. Diplopia and ptosis are sometimes present. In our case here recorded ptosis was intermittent, occurring during acute exacerbation.

Higgens[11] emphasizes the variation in the size of the swelling in the morning and evening. The size varies greatly; the cavity may contain but one drachm of fluid, or may contain as much as three ounces (Bull[12]), or even four ounces, as in the case recorded by Warren[13]. Welge[14] reports a case where, after severe cerebral symptoms and final recovery, the orbit and the frontal, sphenoidal and maxillary sinuses formed one enormous cavity. In this case the cause was probably connected with a gonorrhœa.

In some cases there is an occasional patency of the canal, and then the tumor may be diminished in size and pus forced from the nose by pressure on the swelling; or the tumor may be enlarged by forcible expiration with the nose and mouth closed. Lamzweerde[15] records a case in which the first appearance of a tumor immediately succeeded a violent attack of vomiting.

The apparent pulsation of the swelling, due to breathing, and the discharge of matter similar in appearance to cerebral substance, have only to be mentioned to guard against the possibility of error.

The complications which may occur are not many, but their great importance deserves more than a mere reference.

On account of the blocking up of the air passage and the resulting mouth breathing, a very distressing dryness of the throat sometimes occurs. This, however, does not cause so much complaint as the diminution or even complete loss of the senses of smell and taste.

A true erysipelas is a possible but rather infrequent complication. This cannot be said of involvement of the brain, as Bousquet[16], Richter[17], Demarquay,[18] and Celliez[19] each record a case in which the sinus communicated with an abscess in the anterior lobe of the brain, secondary to the empyema.

Beers, quoted by Walton, 1875, describes a case in which the patient refused to submit to an operation and lost the sight of both eyes.

In cases of cerebral involvement, anosmia and optic neuritis may be the first symptom to which attention is drawn.

Otto[20] records a case in which an enormous pólyp (?) involving orbit, frontal sinus, nose and ethmoidal cells, and causing accumulation of pus, was complicated by meningitis and death.

When there is no visible swelling and no discharge from the nose, as in the case of Celliez, the trouble may be mistaken for abscess of the lungs, as described by Lieutaud.[21] This patient expectorated a large amount of pus, and had fever, headache, and great prostration. After death an enormous cavity, comprising the frontal, sphenoidal and maxillary sinuses, was found filled with pus. There was absolutely no lung lesion.

The treatment of this disease is exceedingly simple, and the results of correct treatment are very gratifying.

In the seventeenth and early part of the eighteenth centuries physicians sometimes used snuff, thinking that, as nature occasionally discharged the collection through the nose, an indication was thereby given that should be followed by art.

Runge, in the middle of the eighteenth century, recommended a more rational treatment, namely, stuffing the cavity, after opening, with irritating dressings, and so causing granulation and healing from the bottom. He mentions the deeply depressed cicatrix and persistent fistulæ occasionally resulting.

Dörner, and also Vidal, many years ago advised having a free opening into the nose and the introduction of a fillet or tube-canula through the opening into the nose. This is substantially the treatment followed to-day.

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[3] Hulke. Ophth. Hosp. Rep., London, 1861, iii, pp. 147-154. Ophth. Hosp, Rep., London, 1862, iv, pp. 176-178.

[4] Lawson. Op. cit.

[5] Wells. Lancet, London, 1870, i, p. 694.

[6] Thompson. Northwest. Lancet, St. Paul, 1884-5, iv, pp. 284-286.

[7] Bull. Med. Record, New York, 1885, xxviii, p. 120.

[8] Michaelis. Jour. für die Chirurgie, etc., 1802, iii, p. 627.

[9] Otto. Deutsch. Arch. f. Klin. Med., 1873, xi, pp. 532-538.

[10] Warren. Surgical Observations, etc., Boston, 1867, p. 57.

[11] Higgens. Guy's Hosp. Rep., London, 1881, 3 s., xxv, pp. 27-40.

[12] Bull. Op. cit.

[13] Warren. Op. cit.

[14] Welge. Dissert. Götting., 1786.

[15] Lamzweerde. Appendix ad Armam. Lugduin Batav., 1693.

[16] Bousquet. Prog. Méd., Paris, 1877, v, p. 972.

[17] Richter. In der Novi Comment, Soc. Reg. Scient. Götting, 1773.

[18] Demarquay. Traité des Tumeurs de l'Orbite, Paris, 1860

[19] Celliez. Journal de Corvisart, Leroux, et Boyer, T. xi.

[20] Otto. Op. cit.

[21] Lieutaud. Acad. Roy. des Sciences, 1735, p. 18.

With the signs and symptoms of a tumor in the locality mentioned we would be inclined to make an exploratory incision. A small exploring needle or a very small drill would give important information as to the contents and thickness of the bony wall of these swellings, if the case presented itself before absorption of the bone has taken place. If a collection of pus be found, a trephine, or the dental engine's drills or a chisel should be freely used. After an opening large enough to admit the finger has been made over the site of the disease and careful exploration of the cavity has taken place, a free opening should be made into the nose, the instrument, guided by a finger of the left hand, introduced into the nostril of the same side. If necessary, force may be used in breaking through the floor of the cavity into the upper part of the nose. A perforated rubber drainage tube should be introduced into the nose through the opening and the entire cavity washed with some antiseptic fluid. Listerine proved very valuable and pleasant in our case. An astringent may be used later, if necessary.

In the records of the cases analyzed one is at once struck by the comparatively small amount of attention paid to the subject of free drainage through the nose. In six cases no mention is made of this, and of these only one is said to have been cured. It is stated in eleven cases that there was no drainage through the nose; of this number three were cured, seven not cured, one not mentioned. In twenty-five cases in which there was free drainage into the nose twenty-three were cured, and in the other two the result was not stated.

Soelberg Wells advises passing an instrument upwards from the nose into the sinus. Ogston[22] says he has never been able to do so, and in our case it was tried, but was found absolutely impracticable. Except in favorable cases this would seem to be very difficult.

In cleaning the cavity, naturally any foreign body would be removed; and in case of polypoid degeneration of the mucous membrane lining the sinus, as described by Ogston and Péan[23], this should be thoroughly destroyed. Any dead bone should be removed, using great care and no force if the bone be connected with the posterior wall of the sinus, lest the membranes of the brain or the brain itself should be injured.

Death occurred in six cases; in four caused by secondary abscess of the brain, in one by meningitis, and in another by albuminuria.

For help in the preparation of this article we are much indebted to Dr. C. J. Colles. The greater number of references has been omitted purposely, as some of the later German articles and French theses are not obtainable. An addendum will be published containing references to these and bibliography to date.

Dr. Jonathan Wright reported a case in an old woman in whom, after removal of intranasal obstruction, it was necessary to trephine the supraorbital sinus, and this still proving unavailing, the whole anterior wall was removed and the wound allowed to heal by granulation from the bottom. When last seen this procedure promised success, but a large and very deforming cicatrix must result, though drainage was of course resorted to, both after trephining and after the more extended operation.

INITIAL EYE SYMPTOMS IN LOCOMOTOR ATAXY.

Read before the Fort Wayne Academy of Medicine.

BY KENT K. WHEELOCK, M.D.,
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PROFESSOR OF OPHTHALMOLOGY AND OTOLOGY IN THE FORT WAYNE COLLEGE OF MEDICINE.

The case which I am about to present for your consideration involves the question of the prodromal symptoms of locomotor ataxy, and while to my mind the symptoms are sufficient to warrant me in arriving at the conclusion that my patient has the prodromata of tabes, yet if any one should think the case not fully established his fullest criticism is invited as much in the interest of the patient as the discussion of the whole question involved.

On November 27, 1887, Frederick B., æt 55, iron merchant in Fort Wayne, consulted me for an ear trouble which had bothered him for some time, as much on account of a singing noise which had recently sprung up as the defect in hearing which had annoyed him for some time. The singing was confined to the left ear.

Right ear W. = $\frac{3}{36}$, left ear W. = P. Eustachian tube not open to catheter, Politzer or Valsalvas' method. By traction on membrana tymp. with Siegel's otoscope there was some improvement in the noise. Treatment by attempted inflation, catheterization and local application did not improve the hearing or noise so the patient was not recommended to continue.

On June 21, 1889, he again came under my observation and gave me the following history: Has suffered from occasional frontal headache for three years, vomiting on two or three occasions Headaches came on about every three or four weeks and lasted from twelve to eighteen hours. On May 1st of the present year had a serious headache which culminated in vomiting at about 3 P.M.; at the same time patient lost consciousness and fell to the floor. He remained unconscious five minutes, the eyes turning up, but not oscillating. Has had dizzy spells for about one year, and the dizziness has increased in intensity till at present are frequent, depending upon his occupation. When he looks up or ascends a stair it becomes worse. The increase has been greater since May 1. Has had sharp shooting pains in the legs below the knees for a year or two, which were attributed to rheumatism, and were treated as such. Yet he had no joint swelling or painful joints. The trouble for which I was consulted was double vision, which came on after the attack in May. He consulted a quack first and was under his treatment for six weeks.

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[22] Ogston. Med. Chronicle, Manchester, 1884-5, i, p. 235.
[23] Péan. Gaz. des Hôp., Paris, 1881, p. 66.

Upon examination I found right eye S. $\frac{20}{30}$; + 0.5 D. S. = $\frac{20}{20}$; left eye = $\frac{20}{20}$; accepts 0.5 D. Right eye + 2.5 D. Jaeger No. 1, 12–16; left eye same, showing that the accommodation ruled by the third nerve is not impaired. The double images are vertical and when neither eye is covered with a colored glass the image of the left eye stands 2½ feet above the image of the right eye, and leans towards the perpendicular or lower one, showing that the cornea of the left eye looks downwards when the candle flame impinges on the retina below the macula and is projected in the same direction it would project images if the optic axis were horizontal or parallel with the other eye. The movement of both eyes is perfect in every direction, showing the effect to be partial only. By placing a prism of 15° base toward the paretic or superior rectus muscle, the images are single, or 8° base up before left eye and 7° base down before right eye blend the images. The Argyle-Robertson pupil is present; the pupil is about the size of a pin head and does not respond to stimulation of light, either artificial or natural, when intensified by condensation. Upon covering either eye and asking the patient to read, the pupils contract; they also contract when both eyes attempt to converge in the act of reading. Under atropia the left pupil dilated in an ovoid manner, but after a few hours the space became circular.

Examination of the ears shows that the t. f. c′ is not heard in the left ear when placed on the vertex, and the same tone heard distinctly in right ear is not heard at all in left ear; t. f. on left mastoid not heard, while the same sound is heard eighteen seconds on the right mastoid in a corresponding position. When struck upon a hard substance, producing a very loud tone, the vibrations heard for a moment at a point near the center of the mastoid and on the temporal bone directly above the external auditory meatus. Voice sound heard very feebly in left ear, W. not at all. Right ear moderate voice heard, also watch. The knee-jerk is exaggerated, and if the patient attempts to close his eyes and stand with his heels together he sways from side to side. His walk backwards is very unsteady and while advancing with eyes open he steps high and drops his feet heavily. While it is a well established clinical fact, substantiated by post-mortem appearances, that deafness of one or both ears frequently follows sclerosis of the posterior columns of the spinal cord, yet tabes could not be predicated upon the presence of this symptom alone, and would only, with our present knowledge, go for a factor in the total symptoms recognized as definitive. Erb regards the coëxistence of the tabes and deafness as accidental rather than causative, and cites Lucas's two cases in support of this statement. Yet he admits the probability of relationship to exist, and cites a case of a Russian naval officer, in which, during the initial stage occasional headaches and deafness had arisen, the latter gradually increasing. This case passed into the hands of Prof. Moos, when, in a few months, total loss of bone conduction was followed by loss of ærial conduction, and the patient became deaf. Later he seems to have modified his opinion, for he states that in some cases of tabes he found definite atrophy of the auditory nerve to be the cause of deafness. Thos. Buzzard, in the *Lancet*, Sept., 1881, quotes Duchene, Remak and Tobinard as having already pointed out that the auditory nerve may be affected in tabes, and Pierrot showed that it is a frequent complication of this disease. On consulting my notes I find that bone conduction in the case of my lamented friend Dr. J. S. Gregg (who died of tabes), whose ears and eyes I examined a number of times, showed subnormal bone conduction. The late Dr. McBride found a greater or less degree of deafness in every case of tabes which came under his observation, although it was often transitory. In the absence of recorded examinations showing in what the defective hearing consisted, we can only assume that he meant that a subnormal bone conduction existed. Ormerod calls attention to it in five out of thirteen cases. In general I think it can only be regarded as a side light in the picture. Yet when seen in connection with the affections of the third, fourth and sixth the attentive should be at once arrested. Amongst all the affections of the special senses, the disturbance of the muscle balance is most frequent in tabes. As prodromal and transitory symptoms they occur as pupil disturbances and muscle paresis in more than 50 per cent. of all cases of locomotor ataxy, according to Erb. And it is this transitory character of the eye troubles which establish their value as prodromata. In the course of the disease, and before its termination, some form of eye muscle disturbance occurs in one third of the cases. They then have lost their value and form only another character in the *bizzarre* picture whose lineaments are so well known. Bunching the observations of Argyle-Robertson, Knapp, Lever and Henpel, the pupils are sometimes contracted or dilated on one side; but more frequently there is a bilateral, uniform, generally pretty considerable contraction, which presents the character of spinal myosis; that is, the pupils do not react to light, but do react distinctly to accommodative impulses. Spitzka says among the exact signs of tabes reflex iridoplegia and abolition of the knee-jerk are the first to appear. He further says that it may be assumed with safety that in 99 out of 100 cases the inability of the pupil to respond to light and the absence of the knee-jerk will be found long before ataxy is developed. Cases have been found where no other positive signs were found. Spitzka found double vision in fifty-eight out of eighty-one tabetic patients in whom the oculo-motor signs were recorded. He says further: "By far the most important of the exact prodromal signs of tabes are two symptoms—one involving a special faculty of coördination and the other the reflex movement of the pupil. One or both of these must be present to justify the diagnosis of incipient tabes." He further says: "Reflex iridoplegia is, when once established, the most permanent and unvarying evidence of the disease, and is of great differential diagnosis, because it is found in very few other conditions. Spitzka recognizes tinnitus and atrophy of the auditory nerves among the symptoms of tabes." There is one symptom, or sign rather, which a typical tabes should present, absent in my case, viz.: the Westphal symptom. Instead of this loss of reflex my case presents a heightened reflex. This may be accounted for on the supposition that the lateral columns have become affected first, when we have later a combined posterior and lateral sclerosis. It has been claimed that the disappearance of the patellar jerk has been preceded by exaggerated reflex and that the exaggerated reflex is a quite common phenomena.

This paper, read before the Academy of Medicine in Sept., 1889, was not intended for publication, but to present what I then thought to be an interesting case of incipient tabes. After referring him back to his family physician with an opinion in accordance with what has been said above, the patient was referred to Prof. Pepper who discovered diabetes mellitus. The eye symptoms were probably due to irritation at the floor of the fourth ventricle, while the ear trouble was due to the spinal trouble as set forth above.

ULCERATIVE ENDOCARDITIS.

Read in the Section of Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889

BY J. G. TRUAX, M.D.,
OF NEW YORK CITY.

This is not a new disease. It has been known and described under several different names for at least ninety years. It is not the intention of the writer to give a complete history of the disease to date. Such an effort would be as profitable as digging up the ground in a field thoroughly cultivated and resplendent in the beauty of its production. The writer, in the researches he has made, has failed to discover any really new thought or fact which could be called the fruit of labor in this particular field during the past few years. His intention is to give a history of such cases as have come under his care, together with any thought which may seem to him to be of practical value. Any person desirous of becoming more thoroughly informed on this subject is referred by the writer to Dr. Osler's lecture, published in the *Lancet* of 1885, and to the writings of others.

Case 1.—Frances Blaza; born in Germany; U. S. five months; age 21 years; unable to speak English; was admitted into the Harlem Hospital May 31, 1887. Her occupation was that of a domestic. No family or personal history could be obtained, excepting the meagre one from her aunt, that her mind was unbalanced at each menstrual epoch, and that her menstrual period did not occur oftener than every three months. Patient was a large, healthy, well-developed girl, and the fact of her not menstruating regularly was evidence that something was wrong with her circulation. When admitted to the hospital she was flowing. Every muscle of her body seemed to take on choreic contractions, and she was unable to remain quiet a moment; mind confused, and at times delirious. The house physician supposed she was suffering from meningitis, and to give her relief had all the hair shaved from her head and the ice cap applied. He also put her upon a mixture of bromide of potassium and hydrate of chloral. Afterwards she was given sulphate of morphine hypodermically, and quinine in ten grain doses three times daily. These medicines had but little effect. The convulsions lasted to the end.

June 1st her highest temperature was $102\frac{3}{5}$°; June 2d, $103\frac{3}{5}$°; pulse, 120; June 3d, 104°; June 4th, $103\frac{3}{5}$°. On the fourth day hyosyamim and morphine were given together. Result—died June 5th, 1 A.M. The autopsy revealed an ulcerative endocarditis, an old pericarditis with extensive adhesions between heart and pericardium, calcified tubercular deposits in apex of left lung, œdema of both lungs, and a parenchymatous hepatitis; slight meningitis. The vegetations were confined to the mitral valve and were numerous. Some of them had ulcerated. None of the other organs diseased.

Case 2.—John C.; age, 19 years; native of Ireland; U. S. three years; single; laborer; admitted into the hospital March 6, 1889. His temperature at this time was 102°; pulse, 120; respiration, 40. His body and limbs were covered with an eruption of a peculiar nature. It was in patches of irregular size and shape; average diameter, one-half inch. Color, faded brown and purplish, not elevated, and would not fade upon pressure; hæmorrhagic in character.

The following is all that could be obtained of his history previous to his admission into the hospital: His habits were good and he was considered healthy. They said patient had been sick for three days. March 7th, temperature 104°; pulse, 120; respiration, 40. March 8th, temperature 103½; pulse, 145; respiration, 60. When first seen by writer patient was very delirious; in the intervals was in a semi-comatose condition. While delirious he was constantly talking to some imaginary person. Autopsy held by Dr. Grauer, March 9th, P.M.. Body fairly well nourished; heart hypertrophied; aortic, mitral and tricuspid valves had vegetative growths upon them. Some of these growths had ulcerated. There was one marked ulcer, so extensive that quite a portion of the heart-tissue was destroyed. At apex of right lung was found a tubercle. The lungs were quite œdematous; spleen enlarged and contained several hæmorrhagic infarctions; brain, there was a large hæmorrhage into the right lateral ventricle, also small abscesses in the cerebrum. There was a large tuberculous ulcer near the ileo-cæcal valve.

Case 3.—Wm. C.; age, 51 years; native of the United States; widower; occupation, none; admitted March 2, 1889. Gave the history of being a hard drinker. Physical examination showed him to be suffering with a slight pain in the knee, but no swelling or redness. Heart hypertrophied; no murmur could be detected. Urine, color normal; sp. gr., 1,014; no albumen. Patient semi-comatose when admitted; temperature, 102°; pulse, 132, and very weak; respiration, 40. During the night he was very delirious; did not sleep at all. March 3d, highest temperature 101½°; March 4th, 101°; March 5th, 104°. Died March 6th, 5:30 A.M. Autopsy held by Dr. Grauer. Rigor mortis well marked; body well nourished. Brain, lepto-meningitis, which had become suppurative; cerebral fluid slightly increased; heart hypertrophied; vegetative growths on mitral and aortic valves; some had ulcerated; spleen enlarged and contained small hæmorrhagic infarctions and abscesses; kidneys showed parenchymatous inflammation, also contained some small metastatic abscesses; lungs œdematous, with small abscesses.

Case 4.—Frank C.; age, 26 years; native of Italy; U. S. three months; occupation, laborer; admitted in the hospital February 28, 1888, A.M. Diagnosis, double lobar pneumonia, cardiac lesions, mitral regurgitant murmur. There was considerable effusion into the abdominal cavity. I will not give the history of this patient in detail. He was admitted February 28th and died March 27th. He was cured of his pneumonia, as the autopsy showed. At no time did his temperature get above 102°. At no time during his illness could albumen be detected in his urine. Autopsy: Fluid in pericardial sac; fluid in pleural cavity; fluid in peritoneal cavity; vegetations on the aortic and tricuspid valves (free edges of the valves); adhesions of pleura on left side; brown induration of the lungs, due to the heart trouble; spleen enlarged by a hard, passive congestion; left kidney larger than normal and fatty; parenchymatous nephritis; right kidney contained small cysts; chronic gastritis; liver had a nutmeg appearance.

Case 5.—Patrick K.; age, 15 years; native of Ireland; U. S. six years; occupation, butcher's apprentice; always healthy until last sickness; was admitted March 10, 1889, into the hospital and treated as a case of tubercular meningitis. Died March 22d. Autopsy made by Dr. Grauer. Body very much emaciated; sordes on teeth; cervical glands very much enlarged; rigor mortis well marked; brain, tubercular meningitis, pachymeningitis hæmorrhagica interna of right lobe; little exudation over cortex, but much more at base; tubercles studded all over left hemisphere, fewer in number over right; both sides of the fissure of Sylvius studded with tubercles; heart, four small tubercles, of the size of a pinhead, over upper surface of right ventricle, and one on the lower part near septum-ventriculorum; small vegetation on mitral valve, which had ulcerated; mitral stenosis and slight regurgitation.

Case 6.—Mr. P.; about 45 years old; a man of considerable wealth; complained of feeling badly for two weeks; did not think he was sick enough to go to bed or to call in a physician. Went into a restaurant to get his lunch. While waiting to be served he suddenly jumped to his feet and, taking hold of a chair, commenced smashing everything within his reach. He was finally controlled by those present, put in a carriage and sent home. The next day the writer was called in consultation to see him. Body covered with purpuric spots, some of which had become brown. He was very delirious, conversing with some imaginary person. It took the united strength of two attendants to keep him in bed. Temperature, 103°. No heart murmur could be heard. From symptoms, temperature, manner of attack, a diagnosis of ulcerative endocarditis was made. Another physician, a specialist on nervous diseases, was called in. His diagnosis was acute mania; his advice, that the patient be sent to an insane asylum. He was sent; result, died in three days. A partial autopsy was obtained. The writer promised he would confine his examination to the heart alone. The mitral and aortic valves had vegetative growths upon them; one, of considerable size, had ulcerated. This last case is really the cause of the writer choosing this disease as the subject of his paper. While the disease is undoubtedly a rare one, there is a possibility of its being more frequent than we think.

The writer's reason for so thinking is this: Of the six cases reported, only two of them were diagnosed properly before death; and were it not that the real trouble was revealed by an autopsy, the truth would never have been known in four of them.

The writer wishes to call your attention to the following observations: 1. In none of his cases was the disease primary and uncomplicated. 2. The heart lesions were not always associated with heart murmur. 3. The temperature and many of the symptoms are common with those of typhoid fever. 4. In none of the writer's cases did the temperature rise above 104°. It was lower in the morning, higher in the evening. 5. Meningitis almost always present. 6. Two cases complicated with tuberculosis, one with pneumonia, one with pleurisy, one with hypertrophy of heart, and the other not examined sufficiently to be able to tell. 7. Treatment seemed to have no particular effect, excepting hypnotics. Fowler's solution of arsenious acid, quinine and bichloride of mercury were tried. 8. The heart was examined and cultures made in three of the most malignant cases for microörganisms; none were ever found. The writer still inclines to the belief that the disease has for its cause the infection of some germ.

17 East 127th street.

THE USE OF VERATRUM VIRIDE IN THE TREATMENT OF DISEASES.

Read in the Section of the Practice of Medicine, Materia Medica and Physiology, at the Fortieth Annual Meeting of the American Medical Association, at Newport, June, 1889.

BY THOMAS LEGARÉ, M.D.,
OF CHARLESTON, S. C.

I beg leave to introduce to the notice of the Section a few remarks upon the properties and uses of the veratrum viride. We all know of its remarkable properties in reducing the frequency of the pulse. This is a property which renders it particularly valuable in diseases, and for which it has been prescribed in fevers, with extreme rapidity of circulation, and in inflammatory affections of the lungs. It diminishes the pulsations of the heart and arteries twenty or thirty strokes in a few hours, simply by its action upon the brain and nervous system. Its powers, I am induced to think from some trials with it, will be found of more value in chronic affections, and as little has been stated of its application to these cases, I shall be excused for calling your attention to some of these diseases, in which, after a moderate experience, I am disposed to think it will prove a valuable agent. These are, first, affections of the head, and all the kindred complaints connected with undue excitement of this organ. These diseases are exhibited in every variety of form, from dulness of the faculties, with heaviness, stupor or oppression, to those more exalted conditions of the same organ, as manifested in extreme nervousness, keen sensibility, and finally, perverted reason. These various grades of excitement are connected with undue vascular action, and this again with organic structure. Any article which operates so efficiently upon the vascular system, must have its influences first exerted upon the seat and centre of all the vital operations of the body, and it is to sedation, then, that we are to ascribe its beneficial effects in the diseases I am about to bring to your notice.

The simplest disorders of the head in which its good effects are manifested, is in vascular fulness of this organ, particularly manifested in the advanced periods of life. The symptoms following upon this state of the brain, and giddiness, dulness of the mental faculties, constant headache, dimness or darkness of vision, the movements of the body being much circumscribed. For the removal of these symptoms I have found the tincture, largely diluted with water, and taken at regular intervals during the day, very effectual. The form of administration is the following: ℞. Tinct. verat. vir., gtt. xxv; aqua, ℥ vi; M. The dose is ʒ ij to ʒ iv every two or three hours until relief is obtained. The doses operate favorably, often without any sensible evacuation, sometimes only to give regularity to the bowels. The next class of cases are those connected with a greater degree of vascular action, and the first that I shall bring to your notice is epilepsy, and unconnected with any mechanical derangement, but a nervous affection, as when it is brought on by grief or mental disappointment.

In a case of this nature, the same formula for its administration as already mentioned has been efficacious in diminishing the frequency of the paroxysms, and of rendering them milder. From a daily recurrence, they have been suspended for a week; and from a violence in their action, attended with convulsive contraction, they have been reduced to simple unconsciousness, of short duration. Upon their recurrence there is no foaming at the mouth, nor is the patient thrown down, but the paroxysm occurs while standing, and rapidly exhausts itself. The only sensible effects, after a month's use of the article, was to impair the appetite, and to give regularity in the operation of the bowels. I prefer presenting the results of this article in a condensed form, rather than in detail.

Another class of diseases of the same organ is that characterized by extreme nervousness, or such exaltation of nervous excitement as borders on mania. We recognize in such subjects extreme vivacity, with alternate dejection of spirits, cephalalgia, frebricula, impaired digestion, coldness of the extremities, sallow complexion, subjects as described seem to be on the verge of insanity, and, without proper ca[illegible] pass ra[illegible] into all its wil[illegible] and ex[illegible]nces.

perance alone holds the reins, and keeps the system from rushing headlong on destruction. With this, so valuable a mentor, our medicine strongly coöperates, and, in a case from which my description was drawn, was found highly useful in repressing exuberances and extravagances of feeling and conduct, which gave to those about the patient the impression of madness approaching, while it calmed and relieved the bodily indispositions. The same form of administration was pursued as in the preceding.

In one other form of disease, of a cerebro-spinal character, viz.: crural neuralgia of the lower extremities, the virtues of this article have been tested. This disease has the misnomer, rheumatism, too frequently applied to it, which it too often resembles in its worst features; and without some suitable and reasonable remedy, the patient is doomed, I might say, to a life of confinement and of suffering. I will not detain you by referring to its causes; in general terms, it is produced by whatever gives rise to inflammation of the spinal column, particularly about the lumbar portion, as lifting heavy weights. After an extensive employment of many articles, I have derived almost immediate relief from the veratrum, the pains in the limbs being greatly mitigated, the uneasiness of the back relieved, the power of locomotion regained in a very short time after commencing the use of it.

Another form of disease of rather different character, but in which, from its reputed operation, it may be considered useful, is in cancerous affections. An article which, from its sedative influence upon the human system, could reduce the pulsations of the heart and arteries twenty, thirty or forty strokes in the minute, in the course of sixteen or eighteen hours, must be considered a useful agent in this disease, attended, as it is, with an exalted state of nervous sensibilities. It was a very suitable subject for experiment, and without any authority, but with an eye to its reputed qualities, I considered that it might be advantageously resorted to. Accordingly, in a case of carcinomi uteri, where the sufferings of the patient were of the usual intense character, I have succeeded in affording very great relief, and this without any of the narcotism induced by the preparations of opium. A great change has been brought about in the sufferings and condition of the patient, and from many painful hours by day and sleepless ones by night, she has come to enjoy comparative ease, the paroxysms of pain being less frequently renewed, and no night passing without quiet sleep of from four to six hours. The form of administration is that already detailed: . Tinct. verat. virid., gtt. xxv or xxx; aqua, ℥vj; dose, ℥ss, taken every two or three hours. This quantity was given daily, without producing any great uneasiness of stomach; and when, from long use, its powers began to subside, they have been subtained by the addition of ʒj to ʒjss of laudanum to the mixture, and this quantity taken in the twenty-four hours. By this compound unwonted energy has been given to the mixture, an effect too great from the amount of laudanum added, so much so, that for the past forty-eight hours comparative tranquility has prevailed, and many hours of sleep obtained. In a disease of such a character, any addition which can be made to our resources in counteracting its malignant disposition, is a duty we owe to our patients, and a great relief to the physician; and it is from the satisfaction I have felt from this single trial that I have been induced (thus precipitately, as may be thought) to proclaim its efficacy. To alleviate pain is as much the province of the physician as to cure disease; and since in many it is all the relief we can aim at, and fate decrees that we must die, it is no less the duty of the physician to soothe and soften the horrors of its approach, and let the passage at least be easy and serene.

These are the few diseases in which I have tested its operation, and they are of a different character from any in which it has been recommended. I may be only on the threshold of inquiry, and it is with a view to elicit from others more information, or a confirmation of my statements, that I have been induced, rather hurriedly, to bring them to the notice of the Association. I have consumed, in these experiments, between two and three ounces of the tincture, and have not known any unpleasant effects produced from the use of it. From my present experience and impression, I am disposed to think that it will always occupy a prominent position in the materia medica. As a local application I have used the white hellebore in scabies, herpes, and kindred affections. I must be excused recording its efficacy in removing a fungous growth from the inner part of the arm, at the elbow-joint, of a warty character, of the size of a hickory nut, which had existed twenty-five years. The patient was of very advanced age, bordering on ninety years; was much annoyed at this morbid growth, not only from the size of the tumor, but from its offensive odor; the profuse discharge irritating the adjacent skin, the necessity of frequent dressing and cleansing (but for her age and extreme aversion to the knife, excision would have been practiced). This morbid growth, after the trial of many articles, was removed by being powdered, several times a day, with the root of the white hellebore. Its effect was to cause the immediate cessation of the discharge, and a gradual exfoliation, I may say, from the whole surface of the tumor, until it was finally entirely removed. To have removed in a short time, by such an application, what the knife seemed only capable of accomplishing, seemed a triumph worthy of record, and must plead my apology for its introduction.

CONTRIBUTIONS TO LARYNGOLOGY.

Read in the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY EPHRAIM CUTTER, M.D., LL.D.,
OF NEW YORK.

I. AN OLD CASE OF THYROTOMY, 1866. SUCCESSFUL, 1889.

In 1866 I performed what was called thyrotomy modified—that is, by the disuse of tracheotomy or tube for the removal of a large sarcoma which nearly filled the calibre of the larynx. It was necessary to make new vocal and breath bands by the scissors. An account was published in the *American Journal of Medical Science*, December, 1866. This case is living and phonates well. She can also sing a few notes of the middle register. This case has also an interest in the light of a recent report of the results of thyrotomy by Dr. Hoppa, of Warrburg. He collected 104 cases done since 1879. Four cases died after the operation; 100 cases were cured, as far as the operation was concerned. He found eighteen recoveries with normal voice out of thirty-eight. Sixty per cent. of Dr. Hoppa's cases had normal voice, and some sang.

The youngest case that the writer operated on was a child of twenty-two months. Here a tracheotomy tube was used. The growth was very voluminous, and new vocal and breath bands had to be made by scissors. Voice was restored, but death from cholera infantum followed soon after. The writer agrees with Dr. Hoppa that the operation is desirable.

2. TWO CASES OF FIBROID ENLARGEMENT OF THE ARYTENOID CARTILAGES.

Case 1.—Résumé after twenty-one years' lapse since treated. Permanent recovery.

In February, 1868, Prof. H. M. Field, M.D., of Dartmouth College, placed under my care Mrs. G. H. Jones, of Newton, Mass. She was a middle-aged lady, apparently in good health, but was annoyed by irritation in the throat, cough, and difficulty of swallowing; her health otherwise was good. On examination I found the throat and larynx healthy, with the exception of the left arytenoid cartilage, which stood up with its tip enlarged, obovoid, the long diameter vertical, side diameter half an inch, and about three-quarters of an inch long. It resembled very much the hard rubber and ivory bougies which are used to dilate the strictures of the œsophagus. The surface was covered with a faintly colored mucous membrane, through which shone the white, pearly, lustrous body of the enlargement, very much as the cartilages of the ribs appear at an autopsy.

It appeared to be of a cartilaginous, or what I now call a fibroid structure. There was no evidence of tuberculous disease, though at that time I had not learned how to detect consumption in the blood as I do now; still, I am not prepared to say it might not have been tuberculous. In this case I was confronted with a lesion I had never heard of, and was thrown on my own resources as to treatment. I gave the matter considerable thought, and being influenced by the good results of free incisions in tissues in the other parts of the body, which were indurated to that extent that I then felt as if foreign substances were imbedded in them, I resolved to try the effect of free incisions upon the growth.

Not satisfied with the knives I had, because they were not simple enough, I had one made by Codman & Shurtleff, the whole length of which, handle and all, was 10½ inches; length of handle, 3 inches; length of shaft of knife, which was rounded and tapering, 5 inches. At the distal end of the shaft there was a piece 2½ inches long joined to the shaft by an angle of 110°. The upper part of the short piece was round and cylindrical; the lower part was flattened in a direction parallel to the long axis of the instrument; on one side near its point it was flat, and on the other beveled in two planes, coming down to a blunt, flattened point.

With this knife I made free scarifications under the laryngoscopic mirror, so that one or two mouthfuls of blood would be expectorated at each sitting. There was so much relief experienced at these sittings, that the patient was willing and ready to accommodate my best judgment. The sittings averaged two a week, if my memory serves me rightly, for three months. The enlargement began gradually to grow less, till finally it was as small as its neighbor on the other side.

In a letter dated Newton, January 9, 1889, she writes: "Since then" (the operation) "there has been no return of the trouble. Of course when I take cold my throat is a little sensitive. Very truly yours, Mrs. G. H. Jones."

Case 2.—Not long after the first case was treated, though I am not sure about the date, an Irishman, Currier, thin, nervous, about 25 years of age, applied to me about difficulty in his throat. He was bothered about swallowing, and said he had a valve growing in his throat which sometimes choked him. His circumstances in life were such that he was not well fed or nourished, and he was impecunious, lacking, of course, the care which case 1 had, whose every want was supplied with loving attention. If anything, this growth was slightly larger than the other, more globular and movable on its base, so that it must have interfered with the respiration, especially during sleep. Indeed, his sleep was broken so much that he began to run down.

Both of these patients could swallow, but with some difficulty. Taking advantage of the experience gained in case 1, the growth was subjected to the same treatment; but owing to the mobility of its base and, I think, the increased density of its substance combined, I was unable to penetrate so deeply as in case 1; nor could I procure so much blood from one scarification as in the other case. As the man grew weaker his difficulty was increased, so much so that I feared he would lose his life by strangulation, and with the consent of the patient and friends I decided to perform tracheotomy and introduce a tube. I did so. My assistants at the operation wished me to use ether, while I preferred chloroform. I told them that the moment he inhaled ether the secretions of the salivary and parotid glands would be started to such an extent that when he became insensible the secretions would run into the larynx, cause a spasm of the glottis, and the patient would suffocate instantly, just as people drown from the inhalation of water into the larynx when they are submerged. But they refused to assist me unless ether was employed, and as I did not see how I could do the operation without their assistance I yielded to their influence; but what has been described as likely to happen, did happen in exactly that way. The man took the ether well, but the moment the secretions of the oral cavity ran into his larynx he ceased to breathe instantly and, curiously, his heart stopped beating. I was then obliged to make my incision without regard to blood, cutting down in great haste, feeling my knife with my finger, to know where I was cutting, laid bare the rings of the trachea, separated the tissues with my fingers, and cut through. In consequence the blood went into the trachea. I put the tube in, but that filled with blood, and having no other means at hand I placed my lips on the tube and sucked the blood out, and the respiration was established, greatly to the gratification of all present. For myself, I told the gentlemen I could have done the operation *secundum artem*, but was obliged to do the best I could. I would not recommend the use of ether in such circumstances. The case went on like other cases of tracheotomy. The man was very comfortable; the growth seemed to be arrested by the relief given to the air passages. He remained under my care for about three months, when he went to Ohio on a visit. There he met some medical gentleman who, I think, was not a laryngologist, for he told the patient that the tube was of no use and should be removed. He removed it, and very soon, I was told, the man died. In this way I lost my patient and my tube.

Remarks.—If I were to meet such cases again, with the scarification, I would use the Salisbury plan of diet for fibroid tumors, and I might apply the galvanic current. In my opinion these lesions are *trophopathic*, and I think that trophopathy (*trophos*, food, and *pathos*, disease) should be the basis of treatment for all throat diseases, organic or functional.

3. A NEW NAME PROPOSED FOR THE VENTRICULAR BANDS.

The writer has studied his own larynx since 1862, inspecting his vocal bands, ventricular bands, arytenoid cartilages, during phonation, cantation from F below in the bass cleff to G above in the treble cleff, and during laughing, coughing, sneezing, respiration and deglutition: but it was not till 1884 that he had a clear idea of the function of the ventricular bands, more commonly called "false vocal cords." To be sure he had traced the alarming, clangorous, peculiar cough in spasmodic croup to the thickening, probably almost œdematous, condition of the ventricular bands. A young lady about 18 years old, apparently well, would at times exhibit this "croupal" cough. When this cough came on in school it excited, at first, alarm in teacher and scholars all over the room. When the cough was produced under the laryngoscope, the contact of the ventricular bands was trifid, dividing the ventricular plane into three equal parts, like a circular disc cut into three equal portions. This was a unique curiosity, and seems to explain the peculiar tussive cough by the chronically swelled condition of the ventricular bands.

The ventricular bands are the chief physical agents in producing cough by holding the breath back and fixing the diaphragm so that it presses the air forcibly against the closed ventricular bands, which, suddenly and instantly relaxed, allow the air to rush forth as if projected from a weapon, and thus the explosive sound is produced which we call cough, and the outgoing air expels whatever secretions may have been borne upwards by the ciliæ of the bronchial and tracheal epithelia to where the air can reach. From this function in cough the ventricular bands might be called "cough" bands or chords.

But their chief function in health is the holding of the breath. Professor C. W. Emerson, Ph.D., principal of the Monroe School of Oratory, Boston, lately stated to his pupils "that for many years he had taught that the vocal cords were the chief agents in holding the breath, and not the rigid setting of the abdominal muscular walls and diaphragm; that in normal breathing the vocal bands close for an instant during expiration, and the action of the diaphragm and of the abdominal muscles thus arrested forces the inspired air into the apices of the lungs, expanding them in a normal manner and supplying fresh air, and that thus the full development of the upper chest was obtained and maintained in speaking and singing; that in unhealthy respiration the vocal cords did not close and hold the air, and that hence flat, weak chests and weak voices were the natural consequences of the unresisted outgo; that when he came across some articles on the subject[1] he found it was not the vocal cords, but the ventricular bands, that did this work of arrest." After this statement the writer demonstrated on himself the fact that the ventricular bands close in order to hold the breath during phonation, cantation, etc., and that, so far as can be seen, the vocal bands have a rest during this function of holding the breath, which is of the greatest importance to speakers and singers who wish to do efficient work, and, to bring the subject home, to the medical man who reads a paper and to the audience who is listening to him.

In 1884 the writer appealed to professional laryngologists to give a new name to the false vocal cords, or ventricular bands; but as he has heard of no response to this appeal he ventures now to suggest some names for approval, premising that the word "chords," or "cords," is not expressive enough of the situation; for to do so one has to imagine a cello D string about 1½ inches long, split longitudinally into two equal parts, a section of the end being a semicircle, the rounded side of the string forming the band, and the squared side prolonged or towards the walls of the larynx. Imagine a string like this. How little music it would make! The fact is, the nearest analogy to the vocal bands is found in the lips of a cornet player, stretched over the embouchure of the mouth-piece; only the vocal bands are joined in front and opened behind, while the lips of the cornet player are joined at each side. The vocal bands are made tense by the stretching backwards of the arytenoid cartilages, etc., while the lips are stretched over the circular ring of the mouth-piece. Players speak of "making a lip," but singers and speakers "make their glottis" instinctively.

The ventricular bands are ill named, because the ventricles they form with the vocal bands are accidental things, and not important functions of which we have spoken, to wit: the proper holding of the breath in respiration, phonation, cantation, sneezing, etc. Suppose we follow the nomenclature "vocal bands," then we might call the ventricular bands (1) breath bands, (2) breath holders, (3) breath cords, (4) breath valves, (5) breath lips.

If, instead of the vocal bands for the true vocal cords, we say "voice bands," then the writer would prefer for the false vocal cords, "breath bands," until some one else favors us with a better name; but as false vocal cords have gone, so shall ventricular bands go, as being inexpressive of the functions of the important mucous membrane, red-colored processes or bands, that form the middle of the three valves of the larynx, to wit: (1) the epiglottis, (2) breath bands, (3) voice bands.

The closing of one after the other, beginning with valve 3, Dr. Frederick Semeleder, now of Mexico, showed beautifully in 1862, during the function of swallowing.

The Ariston, Broadway and 55th street, June, 1889.

LAPAROTOMY FOR PERFORATING TYPHOID ULCER.

BY REED B. BONTECOU, M.D.,

OF TROY, N. Y.

On October 26, 1889, I was called in consultation with Dr. St. John, of Centre Brunswick, to see Arthur P. Dater, a farmer, æt. 27, living near Millville, some miles from Troy, in a healthy district, and with comfortable surroundings. I learned from his physician, Dr. St. John, that he had been suffering from typhoid fever for some forty days past, having had a relapse after the first twenty days of illness, and that at two A.M. on the day of my visit he had been suddenly seized with symptoms of peritonitis. We found him in a state of moderate collapse, pulse very frequent, skin bathed in perspiration, abdomen tympanitic, tense, and an absence of liver dulness. Intestinal perforation was diagnosed, and the chances of life with or without operation fairly stated to his family and himself, and with their consent and his own I proceeded, about 7 P.M., with artificial light, with strict antiseptic precautions, to the operation, assisted by Dr. St. John and my son, Dr. R. Brinsmade Bontecou. A median incision, three or four inches in length, was made, and on opening the peritoneum a gush of gas, followed by a quantity of brownish, muddy serum, escaped. The small intestines were distended and vividly red; the distal portion of the ilium was at once sought for and readily found, and presented a circular perforation of about three-sixteenths of an inch in diameter in one of the Peyerean patches, some four or five inches from the ileo-cæcal valve, through which gas and feculence were escaping. Several of the patches in the lower twelve or eighteen inches of the intestine were much enlarged and thickened, and presented bright red spots on the peritoneal surface, as if threatening perforation. But no other openings were found, and I turned in the ulcerated patch in a transverse fold, being unable to make one longitudinally on account of the thickened mass of glandular tissue, which, if treated in that manner, would have diminished the lumen of the intestine too much. The rupture was covered in by a Lembert continuous suture, and after irrigating the peritoneal cavity thoroughly with boiled water, I closed the wound around a large sized *rubber* drainage-tube (having no glass ones with me), which I had doubled, the bend being within the cavity. Iodoform was freely dusted

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[1] (*a*) Gaillard's Medical Journal, October, 1884; (*b*) Transactions Music Teachers' National Association (America), 1887; (*c*) Transactions Ninth International Medical Congress, 1887, vol. iv, pp. 105-111.

over external wound, and a dressing of antiseptic gauze covered the whole.

His condition after the operation was as good as when he was put on the table, and we returned several miles to our home. My son, who was much interested in the case, volunteered to return and remain with him during the night, his attending physician being unable to do so. After an absence of four hours, consumed in the journey to and fro, from the bedside, my son reported finding him with a better pulse, free from pain, and in a better general condition than after the operation, and promised success. He became mildly delirious towards the early morning, and though hypodermics of morphine were used, he managed in some way to loose his dressing and pulled out the drainage-tube, probably tearing open the repaired intestine, for soon afterwards he suddenly collapsed and died. My son was, unfortunately, not provided with instruments to repair the damage. An autopsy was refused. I should like to add to the foregoing that the intestine in the vicinity of the perforation, and below that point to its termination, was covered with a layer of organized lymph, indicating that the perforation must have been more than seventeen hours old. The appendix was examined and found healthy, but red, as were all the intestinal surfaces.

The first case of perforating typhoid ulcer that I operated upon was in October, 1887. The man was in much more profound collapse, the accident having happened some 36 hours at least before I saw him, and he did not recover. But in this case the shock was less and the prospect of a successful recovery fair, for his condition four hours after the operation was better than before it, and shows that the procedure did not impair his condition. Ether was the anæsthetic employed.

82 4th Street, Troy, N. Y.

MEDICAL PROGRESS.

ANTISEPTIC PROPERTY OF COFFEE.—It has been lately shown by Lüderitz, from a series of experiments conducted by him in the Berlin Institute of Hygiene, that coffee as a drink (infusion) possesses very decided antiseptic properties. Several different forms of bacteria were experimented on, and their growth was found in all cases to be interfered with by the addition of a small quantity of coffee infusion to nutrient gelatine. In pure infusion the bacteria were rapidly destroyed. The question as to what constituents exercise the antiseptic action cannot yet be answered. The caffein is certainly only active to a slight degree, the tannic acid to a greater extent, but probably of greatest importance are substances which are formed during roasting. It is interesting to note that a cup of coffee left lying in a room remains almost free from microörganisms for a week or more.—*Berlin Klin. Woch.*

TREATMENT OF A COMMON "COLD."—Salicylate of sodium in free doses gives as satisfactory results in the treatment of "bad colds" as it does in cutting short tonsillitis. Sodii salicylatis, ℥ss; syr. auranti cort., ℥ss; aquæ menth. piper, ad, ℥iv. M. Sig. A dessertspoonful every three or four hours. A dose every three hours until a free specific influence of the salicylate—tinnitus aurium—is observed—will so far control the symptoms that the aching of the brow, eyes, nose, etc., will cease. The sneezing and "running from the nose" will also abate and will disappear in a few days, not leaving, as is usual under other treatment, a cough, from the extension of the inflammation to the bronchial tubes.

Apropos: DR. PHILPOTS writes the *British Medical Journal* that when sneezing manifests itself, before any inflammatory action has been established, a single local application of salicylic acid to the irritated lining membrane of the nose will be quite sufficient, in the majority of cases, to abort a common cold. The formula suggested is: Sodii salicylatis, ʒiv; acid. boracis (pulv.), ℥j; cocainæ hydrochlor. gr. xxij. M. Mix by agitation, not in a mortar. Snuff, or draw into the nose, or preferably, use with insufflator.—*Memphis Med. Journal.*

PRACTICAL ASEPSIS.—*Asepsis of the Hands.*—Frequent washing of the hands, with or without antiseptics, irritates the skin, producing redness and chapping. It is therefore advisable, after washing and drying the hands, to rub them with one of the following pomades, which are recommended by PROF. LIEBREICH:

1.	Lanoline	5 grm.
	Vanilline	0.01 "
	Essence of rose	1 gtt.
2.	Lanoline	100 grm.
	Parafine	25 "
	Vanilline	0.01 "
	Essence of rose	1 gtt.

Asepsis of the Sick Room.—SEVESTRE advises the use of the following solution, which may be sprayed or evaporated by boiling:

Thymic acid	5 grm.
Carbolic Acid	10 "
Alcohol	100 "
Water	885 "

Asepsis of Utensils and Instruments.—It is sufficient to dip utensils and instruments in a boiling solution of carbonate of sodium (30 grm. per litre). The same solution may be used to disinfect sputa and to clean cuspidors and vessels.—*Jour. de Méd.*

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SATURDAY, MARCH 29, 1890.

MIDWIFERY AND THE MIDWIVES.

The practical results achieved by the application of asepsis and antisepsis to obstetrical practice is one of the greatest triumphs of modern medicine. No fact has been more frequently and forcibly emphasized than this, and the triumph thus gained is all the more welcome because it comes with relief to the very sufferers to whom our sympathies go out most powerfully—to child-bearing women.

Prior to the advent of our present methods of treatment, in many parts of the world, and these the very centres of the highest civilization, child-bearing had become a veritable curse to womankind, at least to those unfortunates who were obliged to take refuge in hospitals. In one of the largest hospitals of the world pregnant women learned to shun certain wards as they would charnel-houses. "Often the most heartrending scenes were witnessed when kneeling women wrung their hands and implored a release from surroundings which they knew to be pestilential." In this same department "lying-in women with pulse-beats so rapid that they could not be counted, with bellies bloated and with tongues parched by the dreadful puerperal fever, protested almost with their last breath that they were *perfectly well*, in order that they might be spared from medical treatment that they had learned was but the precursor of death."

Such were the scenes and such the condition of affairs at a time when puerperal fever destroyed more people than cholera and small-pox combined. But antisepsis has changed all this, and now, *mirabile dictu*, the lying-in patient is actually safer in one of the best conducted hospitals than she is surrounded by her friends in her own home and provided with the average quality of medical attendance. This is not because the hospital patient encounters fewer dangers in her surroundings, but simply because the protection afforded her against danger is more nearly adequate to the exigencies of the situation. In the hospital, cleanliness and real antisepsis are the daily lessons taught, and the hospital is the place where they are most readily learned. Simple as these lessons are, there are none more difficult to inculcate in the case of refractory pupils, and all skeptics and all people of moderate intelligence are refractory in this respect. Even with the most painstaking care and watchfulness hospital authorities experience very great difficulty in carrying out the minutiæ of antisepsis, without which there is no guarantee whatever of success.

The medical students of to-day are thoroughly drilled in the important field of bacteriology, and thus they become intelligent and willing pupils when it comes to the application of the principles involved in the treatment of wounds and the conduct of labor. With nurses the task is a more difficult one, for with no practical acquaintance with the vital phenomena, the bacteria, they often find it an ungracious task to regulate their habits by rules which scarcely appeal to their reason, and which require them to modify almost their entire mode of life.

There are still other classes of individuals who are difficult subjects to deal with. First there are the good, hard-headed, common sense doctors who studied medicine before the upstart bacteriologists were born—men who never encountered a bacterium in a medical practice of fifty years, and who would have little respect for a micro-organism unless it could be demonstrated to be supplied with claws and poisonous fangs. Some of these practitioners are excellent obstetricians and surgeons, for the most part, but when they do lose a patient from septic infection they have no difficulty in convincing themselves that he or she died from causes quite aside from those of microbic invasion; whereas not infrequently the skilful pathologist is able to convict such a one from the testimony of his own mouth. Then, again, there is the class of practitioners who given by DR. JOHN H. RAUCH, of the Illinois State Board of Health, concerning the status of vaccination in this country. He showed that although vaccination is not actually compulsory in some of the States, yet when small-pox becomes threatening, vaccinations are enforced in a wholesale fashion that is calculated to startle the antivaccination partisans of England. After the great fire at Chicago, he stated, there was great suffering, upwards of 80,000 persons were rendered homeless and were provided for in a camp. Small-pox was hovering about and a general vaccination was decided upon, and as a result 110,000 to 120,000 persons were vaccinated or revaccinated, in the camp and vicinity. Other instances were given where indirect compulsion has been applied to schools, and also in regard to immigrants with exceptionally beneficial results. In reply to the contention of the antivaccinationists that the diminished suffering and mortality from variola is really due to the general sanitary improvement of the times, Dr. Rauch gave it as his opinion and experience that sanitation has practically nothing whatever to do with either the spread or the abatement of the infection. Vaccination and isolation are the two important matters for the protection of the people; and without the due observance of these two points the people's best line of defences will have been deserted. The Commission is still engaged upon the inquiry.

This, the first, installment of the Royal Commission's work is of great value. If the remaining portions of their report shall be as strong in the defense of the much attacked vaccination, the results will be very unwelcome to those who have set the investigation in motion.

EDITORIAL NOTES.

HOME.

ASSOCIATION AND SOCIETY MEETINGS.

THE AMERICAN NEUROLOGICAL ASSOCIATION will hold its next annual meeting in Philadelphia, on June 4, 5 and 6, 1890.

THE IOWA STATE MEDICAL SOCIETY will meet at Des Moines, April 16, 17 and 18.

THE MEDICAL SOCIETY OF THE MISSISSIPPI VALLEY convenes at St. Joseph, Mo., March 20 and 21.

THE NEBRASKA STATE MEDICAL SOCIETY meets at Beatrice on May 13.

THE ILLINOIS STATE MEDICAL SOCIETY will meet in Chicago, beginning May 6, 1890.

AMERICAN MEDICAL ASSOCIATION.—The forty-first annual session will be held in Nashville Tenn., on Tuesday, Wednesday, Thursday and Friday, May 20, 21, 22 and 23, commencing on Tuesday at 11 A.M. The addresses will be given on "General Medicine," by Dr. N. S. Davis, Chicago, Ill.; "General Surgery," by Dr. Samuel Logan, New Orleans, La.; "State Medicine," by Dr. Alfred L. Carroll, New York, N. Y.

ADDITIONAL APPOINTMENTS.—The following additions have been made to the Faculty of the New York Post-Graduate Medical School and Hospital: Charles B. Kelsey, M.D., Professor of Rectal Diseases; Charles H. Knight, M.D., Professor of Laryngology and Rhinology; Reynold W. Wilcox, M.D., Professor of Clinical Medicine; Dr. S. Lustgarten, formerly Privat Docent in Vienna University, Instructor in Syphilis and Dermatology.

A CREDITABLE APPOINTMENT. — Dr. H. J. Brooks, of Dixon, Ill., appointed to the position of Superintendent of the Insane Asylum of Northern Illinois at Elgin, made vacant by the death of Dr. E. A. Kilbourne, is a man every way qualified for that important position. His culture and thorough practical experience eminently entitle him to the place, and we bespeak for the Institution an able supervision under his administration.

PRESIDENT OF THE NEW YORK STATE MEDICAL SOCIETY.—Dr. William Warren Potter, the newly elected President of the New York State Medical Society, comes of a medical family. His grandfather, father and son and two uncles have been or are members of the profession. He has been for some time one of the editors of *The Buffalo Medical and Surgical Journal.*

CREMATION ADVANCING IN ENGLAND AND ON THE CONTINENT.—The number of cremations at the Woking Crematory is increasing. In three years, 1884 to 1887, there was an annual average of eight. There were twenty-six in 1888, while last year there were forty-six. During the present year there have been several every week. At the new crematory at Paris there were thirty-five ordinary cremations in 1889, but the number of bodies of still-births, unclaimed paupers from the hospitals and anatomical residuum is such that the incineration is going on almost constantly. At Rome, over 200 cremations were practiced in 1888, an increase over any previous year.

MEDICAL LEGISLATION IN ALABAMA AND FLORIDA.—The Medical Practice Act of Alabama has been found to be ineffective for the prosecution of illegal practitioners, by reason of a failure in the enactment to prescribe a penalty. This omission will probably be remedied by the Legislature of the current year. The Medical Act for the State of Florida is also said to have a defect in that it does not specify that an examination in the practice of medicine shall be required of candidates. This oversight it is thought may be obviated by making the examination in therapeutics broad enough to embrace the omitted branch.

DR. LEWIS MORRIS has been appointed a member of the medical staff of the Pennsylvania Hospital, to succeed the late Dr. James H. Hutchinson.

DR. O. W. HOLMES says it is not true. The poet-physician has had it brought to his notice that a learned small girl of Boston has spoken of him as having been for many years a professor of monotony at Harvard University.

THE STARLING MEDICAL COLLEGE.—The forty-third session of the medical college at Columbus, Ohio, was terminated on March 6, a class of thirty-nine receiving diplomas in medicine.

THE BELLEVUE HOSPITAL MEDICAL COLLEGE held its annual commencement on the 10th inst., graduating a class of 144 members, said to be the largest ever graduated.

FOREIGN.

MEMORIALS TO PROFESSOR BOTKIN. — The memory of the late eminent Russian surgeon, Dr. Sergius Botkin, will be perpetuated in a two-fold way. One of memorial will be by means of a publication bearing his name; the weekly journal founded and conducted by Dr. Botkin, under the title of *The Clinical Gazette*, having been allowed to succumb, his son, Dr. S. S. Botkin, and other former pupils of the distinguished surgeon, have united to start a new weekly periodical, *The Bolnitschnaja Gazeta Botkina*, to be under the editorial charge of Dr. Wassiljew. The other project will undertake the establishment at St. Petersburg of a home for destitute or disabled physicians and their dependants or orphans. This memorial will take his name, it is proposed, and be known as the Botkinhaus, after the manner of that designed to perpetuate the name of the great surgeon of Göttingen by means of the Langenbeckhaus.

A FORTUNE FROM ANTIPYRIN.—Dr. Knorr, the discoverer of antipyrin has found a mine of wealth in the late epidemic of influenza, having taken in, by means of his royalties, considerably more than a million of dollars. He gets 60 cents on every ounce produced, and the drug sells at $1.40 per ounce. This, if true, would indicate a consumption of not less than forty tons of the the article by the victims of *la grippe.*

A NEWLY REPORTED EUROPEAN EPIDEMIC.—According to cablegrams from the Continent a new plague has sprung up, called nouna or noma, in Russia, Austria and Italy. It bears no resemblance to any malady of recent times: The marked feature of the attack is a stupor or prolonged sleep, of twenty-four to forty-eight hours duration. This may come on suddenly in the midst of apparent good health or may be preceded by two or three days of insomnia, headache and malaise. Fatal cases have occurred, the patient never awakening; or the stupor passes off and recovery follows. Whether the disease is contagious, or otherwise, is not yet known.

DR. MICHAEL FOSTER has been elected a member of the Italian Reale Accademia dei Lincei in the Section of Physical, Mathematical, and Natural Sciences. Among the other foreign members elected at the same time were M. Berthelot, Dr. A. Chauveau, and Professors Karl von Nægeli and W. Kühne.

DEATH FROM FRIGHT.—An extraordinary case of death from fright is reported from Rangoon. It appears that a young Eurasean lad was crossing the road, when the rumbling of the wheels of a mail car frightened him, and he dropped down lifeless, the cause of death being syncope.

CAIRO SANITATION.—A Sanitary Engineer, who has been commissioned to report on measures to improve the sanitation of Cairo, recommends a sewer system of 240 miles in extent, costing half a million sterling.

TOPICS OF THE WEEK.

SANITARY IMPROVEMENTS IN NASHVILLE.

It will be a matter of interest to our readers generally, and especially to those who propose to visit the city at the next session of the American Medical Association, to learn with what success the work of sanitary reform has been carried on in Nashville during the last few years.

We quote from the *Cincinnati Lancet Clinic* of Jan. 25, 1889, an article which it credits to the *N. Y. Medical Record* as follows:

"*What Sanitary Reform can do for a City.*—The secretary of the Tennessee State Board of Health, Dr. J. Berrien Lindsley, has prepared an article for the forthcoming Report of the Board which shows in a striking manner how the health of a large community can be benefitted by the intelligent efforts of a few active individuals, who have the support of public opinion."

The article deserves to be studied by sanitarians everywhere—if only as an encouragement to them to persevere in their apparently thankless task, often against the greatest odds.

"Dr. Lindsley's paper is a history in brief of the work of sanitary reform in the city of Nashville, which work was begun in 1874, the immediate incentive thereto being the devastation wrought by the last cholera visitation.

"The Board of Health, as organized in Nashville, consisted of the Mayor, *ex officio*, and of four physicians, chosen by the City Council, with a medical Health Officer devoted exclusively to the work. The city was then small and very poor; hence the Board moved cautiously. No extravagant system of sanitary engineering was urged, no bonds issued, no debt incurred. The first steps were the registration of deaths and thorough local sanitation. Rigid house-to-house inspection by first-class officers was steadily pursued. Health ordinances impartially and uniformly enforced. A complete sanitary survey of Nashville was taken early in 1877, a thing which had not at that time been attempted in any southern city, and, indeed, in only one or two in America. Its value can hardly be computed. Besides giving that information without which a Board of Health moves in darkness, it is an educator without equal. An intelligent and respected member of the police force, well known and well liked by all the community, visited every house and every building in detail. With suitable memorandum books he entered the results of his inquiries. Thus, in a few months, every one in Nashville was initiated into the work undertaken by the Board—that of making Nashville a city renowned for health and proof against epidemic scourges."

"During the epidemic of yellow fever in Western Tennessee, in 1878, Nashville became a veritable city of refuge, and its Board of Health had an opportunity to demonstrate the efficiency of individual isolation and perfect sanitary preparation. The heathfulness of the city at this time was so universally ascribed to the efforts of the Board of Health that the citizens gave them an ovation as a mark of gratitude and public appreciation of their services. This public demonstration was, of course, of far-reaching benefit in impressing upon the entire community the undoubted value of sanitary reform.

"In the fall of 1883 the Board of Public Works came into existence, and at once began the work of remedying the great defects made apparent by the sanitary survey. These were especially the deficient water-supply; the almost total lack of drainage; the miserable condition of the alleys; and the pressing need of improved streets and sidewalks in many portions of the city. The progress made in each of these lines has been progressive and most satisfactory. The city has now twenty-five miles of sewers, and the new water-works, nearly completed, will furnish a daily supply of thirty million gallons.

"But of more interest than a mere statement of what has been done in the way of sanitary improvement is a comparison of the results following these improvements. This can be stated in very few words:

"In 1877 Nashville occupied an area of scant three miles, with a population of 27,000, and a death-rate of 34.55 per 1,000 yearly. Now it has an area of 4,021 acres, or six and one-third square miles, with a population of 68,531, and a death-rate of 15.31.

"As Dr. Lindsley justly says, this is progress. It is true that Nashville is favored by its position, and it would be a disgrace were it not a healthy city; but that should be no cause for discouragement for other less favored localities. Even the city of Mexico, built as it is almost in a swamp, is destined, without doubt, to become one of the healthiest cities in the world when the huge sanitary work now in course of construction is completed. Nashville was not a healthy city before Dr. Lindsley and his associates took hold of it, and it is now what they, and others inspired by their zeal and enthusiasm, have made it; and there is no valid reason why every other city and town in the country should not be improved in the same way, if only the right man can be found to undertake the task. They certainly ought to be urged at least to try, after reading what Nashville has accomplished quietly and as a result of patient effort."

SIR WILLIAM GULL.

The English newspapers are unusually rich in gossip regarding the late Sir William Gull. Among these the *Pall Mall Gazette* tries its more than "'prentice hand" at an analysis of the causes of his success. It credits him with being "one of the ablest, most original and striking personalities which a somewhat conventional profession has produced in this generation. Everything about him was picturesque; his humble origin as son of a village trader; his Napoleonic cast of face and feature; his brilliant conversation, teeming with epigrams, paradoxes and quotations; his extreme simplicity of life at home, and his influence and reputation at court and in "society," combined to make him one of the most notable and enigmatical personages of the day." This much-read Gazette alludes to his career as beginning with a chance introduction as a boy-guide to the resident governor of Guy's Hospital, his subsequent installation in the Blue-Coat School, and then his drudgery at the gallipots of Guy's, in all of which relations he conducted himself with a most "sagacious profundity of manner." It pictures him as an orator dealing in paradoxes, a lecturer from whom a lucid diagnosis was always to be expected, a nihilist in therapeutics, the friend of the scientist, and the idol of all the duchesses. Our authority tells how he was wont to refresh his memory with notes of former consultations before the patient was ushered into his presence, and then dumbfounded him with a "superhuman retentiveness of memory" and "an intense personal interest in the case." Yet, with all these juggleries, Sir William was a conscientious student, devoted to his duties, and of Spartan simplicity in his habits of life. The added accomplishments of the courtier and diplomat, the advantages of a "manly and massive type of comeliness," a cautious zeal for his reputation, and a certain skill in the arts of pleasing, brought more grist than is usual to the mills of most men. More of Richelieu than a Bismark, he belonged to that type of our race which is destined to succeed anyhow, anywhere, and in any capacity.

BACTERIOLOGICAL STUDY IN VIENNA.

The Vienna correspondent of the *Medical News* writes as follows:

Bacteriological investigation goes on constantly with undiminished vigor, and at last the subject of malaria seems settled. It is taught here that the plasmodium malariæ is the cause, that it enters the blood, taking up its abode in the red corpuscles, and gradually growing therein. At first it is very small, one-fifth the size of the corpuscle, but as it grows it takes up pigment, which is deposited in small granules in its periphery. It grows until it completely fills the corpuscle, and then it divides into a number of daughter cells that repeat the same process, and at the division the pigment granules are set free in the blood, causing the well-known *melanosis malariæ*. There is very little malaria in Vienna, but Dr. Bamberger, Nothnagel's first assistant, told us that in every case they succeeded in finding the plasmodium. The use of quinine diminishes the number of the organisms very markedly, and in case of cure they can no longer be found. They are also more numerous just before the chill, and immediately afterward are hard to find, for then the division has taken place, and the small cells escape observation far more easily. Golgi, an Italian pathologist, has written an excellent monograph on this subject.

EFFECT OF INFLUENZA ON THE MORTALITY OF THE STATE OF NEW YORK DURING JANUARY.

The reports of the New York State Board of Health show that the number of deaths in that State during the month of January was nearly 5,000 greater than the average for this month in the past five years, the mortality being greater by 2,000 than that for July, the most fatal month in the year. The marked increase is due to the occurrence of epidemic influenza, which began in December. While but a few hundred deaths are attributed to this cause directly, its influence on the mortality of other affections was very great.

Acute respiratory diseases are given as the cause of three times as many deaths as the average in January, and phthisis showed an increase of 70 per cent. in mortality, while in nervous, circulatory and digestive diseases the death-rate increased from 37 to 40 per cent. On the other hand, the number of deaths due to zymotic diseases was less by 340 than in January, 1889, and the percentage of deaths of children under five years of age was less by about one-half.

Of the cities in the State, Albany shows the greatest death-rate, 41.12. New York's rate was 34.44, and Brooklyn's 29.72. The largest death-rate in the State was in the town of New Rochelle, Westchester county, namely, 52.—*Boston Medical and Surgical Journal.*

COINCIDENT INTRA- AND EXTRA-UTERINE PREGNANCY.

We are indebted to the Vienna correspondent of the *Medical News* for the report of the following remarkable case:

A few days ago, Dr. Rosthorn, assistant at Professor Chrobak's gynecological clinic, operated on a case of apparent ovarian cyst. Eight weeks before, the woman had been delivered of an eight months' child, normal labor, and had been perfectly well until three weeks previous to the operation. The operation was made in the ordinary way, and the supposed cyst removed. At one portion of it a peculiar cord-like process was attached. Rosthorn examined the other ovary—it was normal—but, while examining it, a small hand slipped out from between the intestines. This was seized, and a full-sized child was removed from the abdomen, and to its umbilicus was attached a cord exactly similar to that found on the cyst. They then looked for the fœtal membranes, and found them very deep and everywhere adherent to the intestines and peritoneum. The child's skin was nearly normal, though slightly macerated. Then the membranous sac was brought up and sewed to the peritoneum, just as the stump is treated in extra-peritoneal amputation of the uterus; the abdominal walls were united, and the sac dusted with salicyl-tannin. The woman rallied, and now, seven days after the operation, is doing very well. The careful examination of the removed cyst showed that the tumor was merely the placenta coiled up where it had been fastened to the left Fallopian tube, and the case now resolves itself as follows: There was an extra-uterine pregnancy, with the fœtus in the left Fallopian tube, and this fœtus was carried beyond term, and died. Throughout the time there were no symptoms from this extra-uterine pregnancy, and an intra-uterine pregnancy went on nearly normally at the same time. It cannot be established, though it is probable, according to the authorities here, that the two children were really twins, and one developed within, the other outside of, the uterus. Thus it stands without a parallel in the history of obstetrics, and the full report by Rosthorn will be looked forward to with great interest.

THE PORTRAIT OF A SURGEON GIVEN TO A CHURCH.

The *London Medical Recorder* states that a grateful patient of Professor Billroth's has made a present to a church, in the neighborhood of Vienna, of a portrait of the distinguished surgeon, delineating him as he appears in his operating-room.

PRACTICAL NOTES.

THE USE OF ALCOHOL IN HOSPITALS.

A very interesting report has been presented to the British Medical Temperance Association by Drs. Morton Moir and Pearce, on the administration of alcohol in hospitals. The committee have drawn up a series of tables full of instructive figures, instituting a comparison between the amount expended under this head in 1863 and in 1888. The remarkable fact is noted that in these twenty-five years there has been, from the returns made by 113 hospitals, an increase of 300 per cent. in the charge for milk and a decrease of 47 per cent. in the charge for alcohol. A second table gives returns from sixty hospitals of which no previous record could be found. On the basis adopted by Dr. Fleetwood Buckle, in his report on 1863, these sixty hospitals showed a decrease of 39 per cent. in the expenditure for alcohol per bed. A third table shows the comparative alcoholic charges per bed in 1863 and 1888 respectively. In seventy-three hospitals there had been an increase of 2,108 beds, and a decrease of total average cost per bed of £78 3s. 5d. Beds have thus increased at the rate of 25 per cent., while the amount expended on alcohol has decreased at the rate of 47 per cent. Only eight of this group of hospitals showed an increase in the quantity of alcohol consumed. In the remaining sixty-five the decrease ranged from 30 to 83 per cent. In the London Fever Hospital, while milk has risen from £150 to £650 per annum, the disbursements for alcohol were at the rate of only 15s. 2d. per bed in 1888, as compared with £3 5s. per bed in 1863. In St. Bartholomew's Hospital the milk bill had gone up from £600 to over £2,000, while the alcohol bill had gone down from £1,446 to to £953. These statistics prove that there has been a gradually increasing rational medical administration of alcohol, the credit of which must be awarded to the medical staffs of the hospitals, a fact which affords yet another proof of the lively interest in the promotion of temperance taken by the medical profession.—*British Medical Journal.*

IODINE AS A REMEDY FOR VOMITING.

M. Darthier (*L'Union Médicale*, Dec. 10) bears testimony to the value of tincture of iodine administered internally for the relief of vomiting, a remedy recommended by the late Prof. Lasegue in the vomiting of pregnancy. The author had observed its use in nineteen cases, eleven of which were tubercular subjects, and found that it is of more value in the vomiting of early phthisis than in that of the later stages of this disease. At the same time he gives instances of advanced cases with obstinate vomiting where the symptom was largely controlled by the drug. Amongst other cases he gives one of bronchial dilatation (subsequently fatal from acute tuberculosis) in a female who for three weeks had regularly vomited after every meal. From the date of commencement of the use of the drug she ceased to vomit, and after a week's treatment, which was not productive of any signs of iodism, was completely cured of the symptom. Apart from phthisical vomiting, M. Darthier finds it useful in alcoholic gastritis, in ulcer of the stomach, and in the vomiting of pregnancy and of chlorosis, instances of which are recorded. He says that the majority of the patients take the iodine with pleasure; it often produces an agreeable sense of warmth in the stomach, lasting from five to twenty minutes. The dose is ten drops dissolved in 125 grams of water, taken in three portions immediately after meals. In a certain number of cases symptoms of iodism are produced, chiefly coryza; but a good many patients do not experience any such inconvenience from it.—*The Lancet.*

ANTISEPTIC TREATMENT OF GASTRO-ENTERITIS.

A writer in the *Revue Générale de Clinique et de Thérapeutique*, January 23, 1890, advises creolin in the treatment of gastro-enteritis, and prescribes it as follows:

℞ Creolin . . . . 8 minims.
Pulverized sugar . . . . 75 grains.

Mix, and divide into ten powders, one of which may be given every two or three hours.

Or,

℞ Creolin . . . . 1 to 2 drops.
Syrup . . . . 1 ounce.
Peppermint water . . . . . . 2 ounces.—♍

Of this a teaspoonful may be given every one or two hours.

Asepsis of the lower bowel may be secured by enemata of 1 oz. of sodium benzoate in one quart of water; boric acid 1 to 5 drachms, sodium salicylate in the same quantities, or resorcin 7 grs. in a quart of water. Enemata of equal parts of lime-water and distilled water may be used for the same purpose.—*Medical News.*

ATROPINE IN ENURESIS.

In the *Archives of Pedriatics* for October, 1889, Dr. William Perry Watson reports thirty cases of incontinence of urine occurring in children from 15 months to 3 years of age, in nearly all of which cure was produced by the use of sulphate of atropine. The solution was composed of one grain of atropine to an ounce of distilled water, and one drop of this solution was given for each year of the age of the child. It was given at 4 and 7 o'clock in the evening. Some of these cases occurred in Dr. Watson's private practice, and others in the public institutions which were under his care.—*Therapeutic Gazette*, December 16, 1889.

SOCIETY PROCEEDINGS.

New York Academy of Medicine.

SECTION ON ORTHOPÆDIC SURGERY.

Stated Meeting, February 21, 1890.

V. P. GIBNEY, M.D., CHAIRMAN.

DR. FRANK HARTLEY presented a case of

DOUBLE CONGENITAL TALIPES EQUINO-VARUS.

The patient, a male, 20 years of age, and a cigarmaker, was admitted to the Roosevelt Hospital on May 27, 1889. This deformity, which has been present since birth, increased between the sixth and twelfth years, and although it has not caused much pain, he walked with a curious shuffle of the foot from side to side. He was very desirous of an operation. Examination showed that there was about two-thirds of the normal motion of the ankle-joint, and that the neck of the astragalus was twisted so as to look directly inwards, and the os calcis was placed obliquely to the tibia. He had the peculiar pallor of the skin and mucous membranes common to cigarmakers. Heart, lungs and kidneys were normal.

On June 5, a cuneiform osteotomy was performed over the greatest convexity of the left foot. The wedge of bone removed consisted of portions of the tibia and fibula, the whole of the astragalus, and enough of the cuboid, scaphoid and os calcis to allow of a reduction of the deformity. The foot was placed at once in proper position. Healing was normal, and on July 25 a similar osteotomy was done upon the other foot. The wedge removed consisted, as in the other foot, of a portion of the tibia and fibula, the whole of the astragalus and scaphoid, and portions of the os calcis and cuboid. On August 24, union in the left foot was good, and fairly good in the right foot. By the middle of October, he was allowed to walk about the wards, and on November 29 he was discharged from the hospital, and has since been under observation in the outpatient department. The muscles are gaining rapidly in size and strength under daily applications of electricity. Crutches are only used for long walks, and judging from the progress so far, these can be discarded in a month or two, and possibly in four months, even the retentive apparatus which he now wears can be removed. Dr. Hartley did not consider this deformity the result of an arrest of development, but of pressure effects within the uterus. He believed these cases of secondary congenital club-foot could usually be cured by mechanical measures, although the severest forms require, as in the present case, an operation.

DR. JOHN RIDLON presented a male patient, 18 years of age, who came under observation last April for a deformity of both feet which had made walking difficult and painful for the previous two years. There was cavus and equinus, and on walking, varus of both feet. There were no reflexes on "point pressure." On April 4, 1889, Dr. George S. Huntington divided the plantar tissues of the right foot by open incision, and having forced the foot into proper position by Thomas' wrench, divided the tendo Achillis subcutaneously. On May 8, a similar operation was done upon the left foot, and was followed by primary union. The patient is now able to walk well and without discomfort.

Dr. Ridlon also presented a boy of 13 years, who first came under his observation on May 12, 1889, having begun to limp about three months previous. The foot was found to be held rigid in the position of valgus by contraction of the extensor and peroneal muscles; but when the patient was etherized with the intention of dividing these tendons, the foot could be easily placed in a position of equino-varus. It was retained in this position by plaster of Paris for about two months. There was no pain following this manipulation and replacement of the foot, and when the plaster was removed, motion at the ankle and tarsal joints was normal, and the limp had disappeared. On October 4, he was found to have relapsed into his former condition. The foot was placed in the best possible position, and has since then been retained in this position by plaster of Paris.

DR. V. P. GIBNEY presented a lady 25 years of age, who had been referred to him in December, 1887. She walked on the outer borders of the feet, where large callosities served as a base of support. The soles of the feet looked backward and upward, and her gait was especially reel-like. There were extensive cicatrices over the tendo Achillis, and it was quite impossible to correct the deformity by manual force.

On December 26, 1887, a cuneiform osteotomy after the method of Dr. Charles T. Poore was performed; but after extensive section of the bones and free division of the deltoid ligament, and of a few resisting points of the plantar fascia, it was not possible to place the foot in proper position. A free lateral incision was then made and muscles and tendons divided after the manner of Dr. Phelps. After some further difficulty, a good position was secured, and the foot was placed in a Thomas club-foot shoe, over which plaster of Paris was applied. The dressings were removed on the following day on account of free oozing, and by December 30, it was found absolutely necessary to put her in charge of a trained nurse, and from this time until February 16 she suffered from septicæmia. At the end of this period the wounds were healing rapidly, and the foot was in excellent position. On February 22, having secured her admission to the Hospital for Ruptured and

Crippled, a similar cuneiform osteotomy was done upon the other foot, which was then brought into good position and dressed antiseptically, and covered with a plaster of Pâris bandage. Nearly all the wound healed by first intention, and recovery was uninterrupted, although retarded by the presence of corns and tender callosities. She gets on very well now, although the gait at present is very much modified by the condition of these corns.

DR. W. H. BERG took an exception to Dr. Hartley's statement that the deformity in his patient was probably caused by too little space in the uterus; he thought this theory had been pretty generally abandoned.

DR. HARTLEY replied that he did not think this was the case, as in Bessel-Hagan's book on the "Etiology and Pathogenesis of Club-Foot." considerable space was given to this very thing.

DR. N. M. SHAFFER had found that a certain number of cases of adult club-foot yielded to mechanical measures; while in many of those which were only amenable to operative treatment, the patient's condition untreated was often as good as that obtained by operation. One great obstacle to the treatment of these cases is the cicatrices from previous operations.

DR. H. L. TAYLOR said that a new instrument just perfected by Dr. Bradford, of Boston, offered another alternative to methods already in use. By it, the surgeon was able to obtain a very perfect grasp of the foot and thus twist it into position.

DR. SAMUEL KETCH remarked that Dr. Ridlon's second case showed decided reflex spasm and pain on rotation of the foot, and he considered the case one of valgus, symptomatic of some bone lesion. The rapid relapse seemed to favor the view of the osteitic origin of the trouble.

DR. BERG thought the bone lesion was probably at the point where the outer malleolus impinges upon the astragalus. There was certainly no muscular trouble present.

DR. SHAFFER felt sure there was some bone irritation present, and as it was more resistant to adduction than to the other movements, when the astragalus and scaphoid were crowded together, he thought the lesion was probably located at the articulation between the astragalus and scaphoid, but not involving the ankle-joint itself. He had had a similar experience in regard to the sudden disappearance of the deformity after etherization; but he had not suspected a tubercular osteitis, because he had never seen such cases go on to suppuration. They are more like inflammatory flat-foot, running a long course, and ultimately terminating, not in anchylosis, but in recovery with pretty good function.

DR. A. B. JUDSON was likewise of the opinion that the case was one of articular osteitis, and its duration would favor this view. The circulation of the limb being normal, eliminated the presence of a nervous lesion.

DR. RIDLON, in closing the discussion on this case, said he could not conceive it possible that a tubercular osteitis could be subjected to such vigorous manipulation without being followed by some evil consequences. When the spasm has existed, the patient has always complained of pain on attempted motion, but he walks and jumps around like other boys. Is it possible that an osteitis can exist for a year, as this has done, under such treatment, without an aggravation of the disease?

DR. W. R. TOWNSEND presented for Dr. Gibney the left knee of

A CASE OF DOUBLE HIP-JOINT DISEASE,

Which had been removed post-mortem. The joint had been immobilized in a plaster of Paris splint for eighteen months. There was no disease at the knee when the first plaster had been applied, and the long confinement of the joint showed that no gross changes had occurred in the bones or cartilages. The synovial membrane was removed and found apparently healthy, and the joint contained a small amount of synovial fluid when first opened. The motions were limited to an arc of about fifteen degrees, and yet after the ligamentum patellæ was divided, extension and flexion could be made to the full limit. The lateral ligament did not seem contracted.

DR. BERG said that the specimen only showed that the joint surfaces were normal, but it did not show that the soft parts had not been affected by prolonged immobilization. The specimen was of medico-legal interest, because it was sometimes claimed that real and permanent disability had resulted from such prolonged immobilization.

DR. SHAFFER feared the results of prolonged immobilization, for, in an experience with seven cases of ununited fracture of the femur, it had resulted in effusion into the knee-joint. He had employed in these cases an apparatus which made traction upon the thigh, but which was not applied below the knee.

DR. RIDLON thought we should distinguish between the immobilization of cases of fracture adjacent to joints, and of healthy joints which were positively free from any injury, for the results in the two classes of cases were widely different. The traction apparatus employed by Dr. Shaffer might have produced constriction of the limb, and so led indirectly to effusion into the joint.

DR. JUDSON said anchylosis was the result of inflammation, and immobilization of an inflamed joint, or the arrest of function was a primary antiplogistic.

DR. HARTLEY said that in fractures in the lower part of the thigh, where there was a possibility of hæmorrhage into the joint, passive motion should be begun as soon as possible; but in fractures high up, with very little possibility of injury to the joint, longer immobilization was permissible. It is often very difficult to estimate the amount of injury to a joint at the time of a fracture or other severe injury.

Dr. Taylor said that he had never hesitated to immobilize a healthy joint for any length of time that might be necessary, and he had never seen any bad results from it.

Dr. Ridlon described an easy and inexpensive method of producing the flat-foot plate used by Dr. Whitman. The usual method is to have an iron foot made, on which the plates are hammered out. Recalling the copper-plated plaster casts recently exhibited to the Section by Dr. A. M. Phelps, he had taken a plaster of Paris cast to Lovejoy of 45 Rose Street, who had coated it with a solution of silver, and then, by means of electro-deposition, had obtained a copper plate of the desired thickness, and at a cost of only $1.50.

The copper plate so prepared was exhibited.

OMESTIC CORRESPONDENCE.

h of the First Vice-President of the American Medical Association.

o the Editor:—As Secretary of the University Medical College of Kansas City I am instructed to inform you of the death of its President and Professor of Surgery, John W. Jackson, M.D., who was the first Vice-President of the American Medical Association; he died on March 13 of embolic pneumonia resulting from pyæmia (probably), at the age of 58. He was the chief surgeon of the Wabash railway system, and last year was President of the National Association of Railway Surgeons.

Emory Lamphear, M.D.

Kansas City, Mo., March 13, 1890.

NECROLOGY.

John Jacob Crane, M.D.

Dr. John Jacob Crane, who died in New Haven, Conn., was for many years a prominent physician of New York City, having been for more than a quarter of a century one of the visiting surgeons to Bellevue Hospital. He was a graduate of Princeton College in 1840, and of the College of Physicians and Surgeons, New York, four years later. About five years ago he retired from active practice and made his home at New Haven. The deceased was in his seventieth year at the time of his fatal illness, which terminated March 4.

MISCELLANY.

Arrangements for Visiting Mammoth Cave.—The Louisville & Nashville R. R. Co. offer to all who may desire to visit the Mammoth Cave this privilege—"All who may attend the meeting can stop over at Mammoth Cave Junction going to Nashville, by notifying our conductor between Louisville and the Junction of their intention to do this; he will then permit them to retain their tickets for transportation on another train from the Junction to Nashville. Before leaving Mammoth Cave, the tickets should be presented to our agent at the Mammoth Cave Hotel, who will endorse them, making them good for passage to Nashville even should the limit have expired. If it is not convenient for all to visit the Cave upon the south-bound trip, we can arrange for such visit when returning from Nashville, but this will not be arranged until the Secretary of the Association notifies the Company that some in attendance wish to make this side trip after leaving Nashville."

The Tenth International Medical Congress.—It is announced that the following Scotch Committee has been appointed to coöperate with the President and the General Secretary: Mr. Joseph Bell, Mr. Geo. A. Berry, Mr. John Duncan, Prof. T. R. Fraser, Prof. W. T. Gairdner, Dr. G. A. Gibson, Dr. P. M. Bride, Sir George H. B. Macleod, Dr. Peel Ritchie, Prof. A. A. Simpson, Prof. Grainger Stewart, Dr. J. B. Tuke and Sir William Turner.

For the Information of Persons Desiring to Enter the Medical Corps of the U. S. Navy.—A candidate for examination and appointment in the Medical Corps of the Navy must be between 21 and 26 years of age, and must apply to the Honorable Secretary of the Navy for permission to appear before the Naval Medical Examining Board (now in session at the U. S. Naval Hospital, Brooklyn, N. Y.)

The application must be in the handwriting of the applicant, stating age and place of birth, also the place and State of which he is a permanent resident, and must be accompanied by letters or certificates from persons of repute, testifying, from personal knowledge, to his good habits and moral character, and that he is a citizen of the United States.

FORM OF APPLICATION.

——————————, 189

To the Honorable Secretary of the Navy, Navy Department, Washington, D. C.:

Sir:—I request permission to be examined for an appointment as Assistant Surgeon in the United States Navy.

I was born at——, and was——years of age on the——day of——, 189—, and am a citizen of the United States, residing in——, county of——, in the State of——.

I enclose herewith certificates as to moral character, habits and citizenship.

Very respectfully, ——————

If, in reply to the above, the candidate receive a permit, he will notify the President of the Board of the fact and request him to appoint a time for his examination.

Candidates will be expected to present to the Board testimonials of educational and professional fitness.

The Board is required, under oath, to report on the physical, mental, moral and professional qualifications of the candidate; so that the examinations are necessarily rigid and comprehensive, though simple and practical, and not beyond the attainments of any well educated physician.

A successful candidate, upon the completion of his examination, will be notified by the President of the Board that he has been found qualified.

An applicant found "not qualified" may be allowed a second examination after one year, but not a third.

No allowance will be made for the expenses of persons